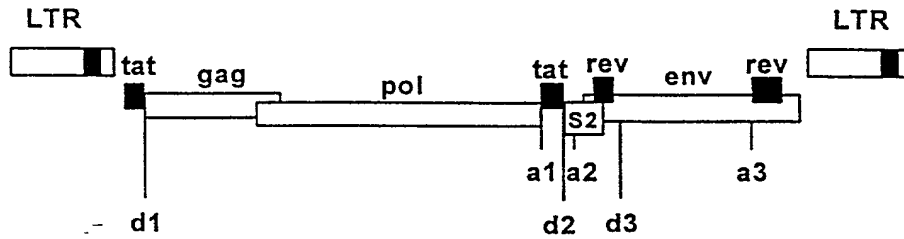
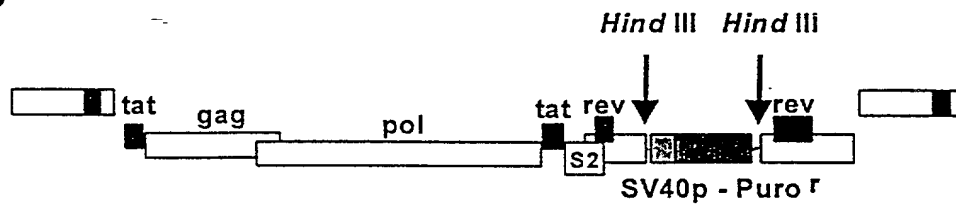


Figure 1

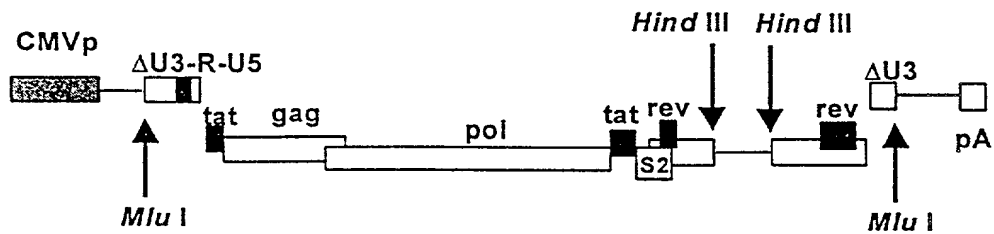
EIAV genome



pESP



pONY3



pONY2.1nls/lacZ

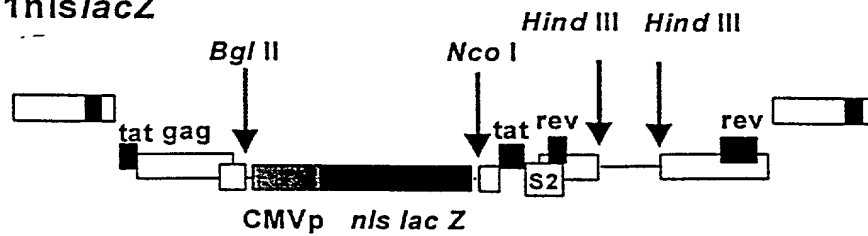
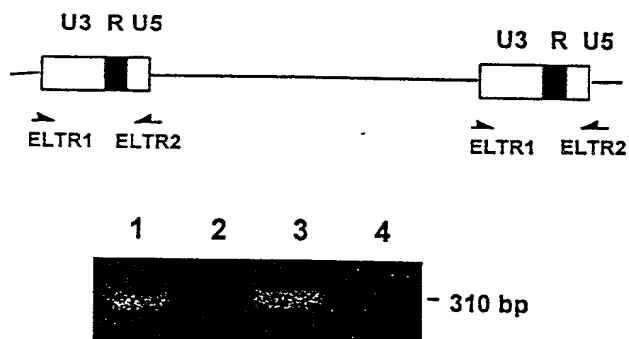


Figure 2

A. LTR



B. pol

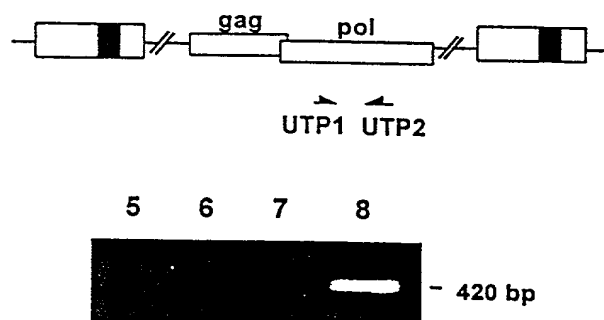
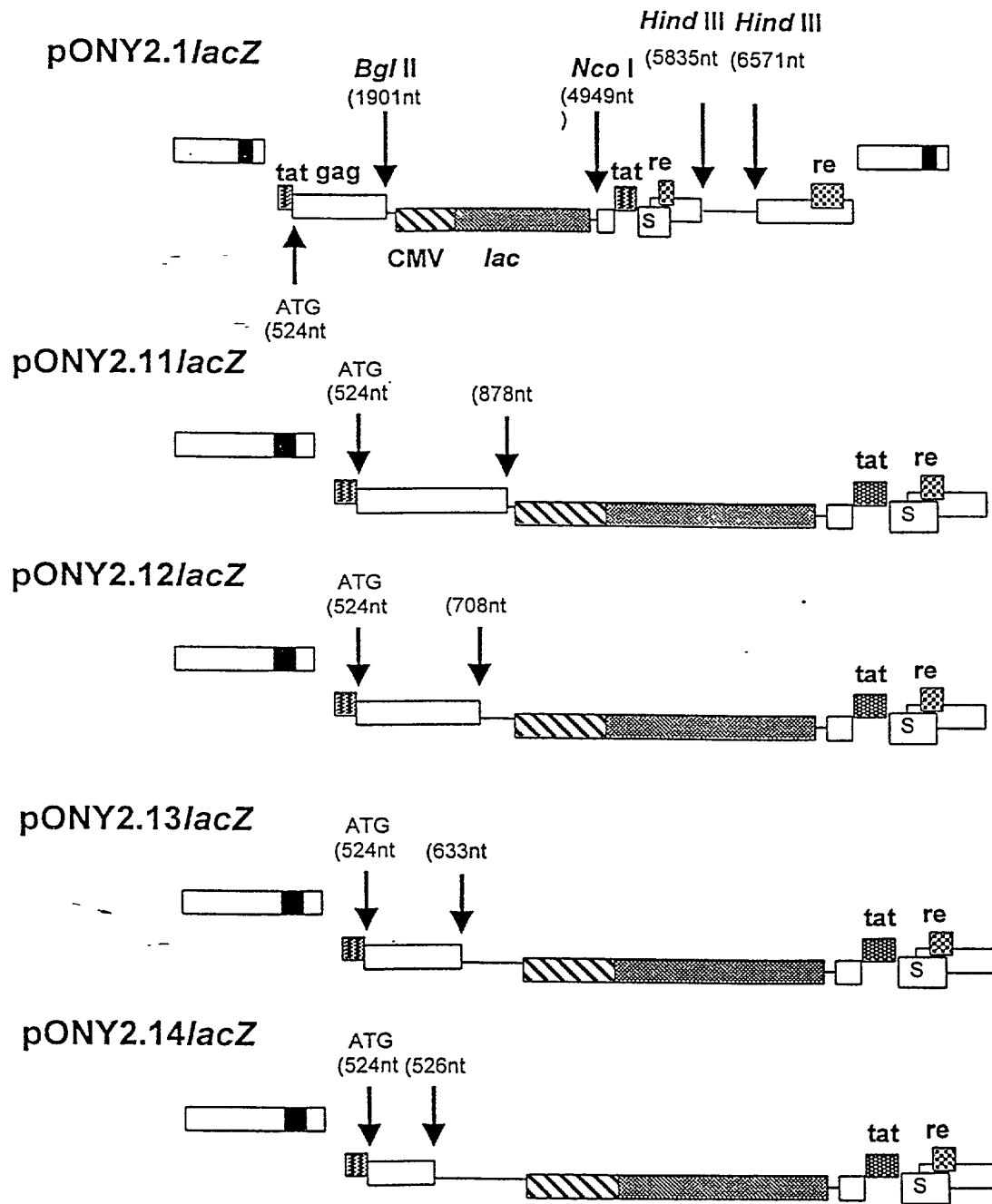
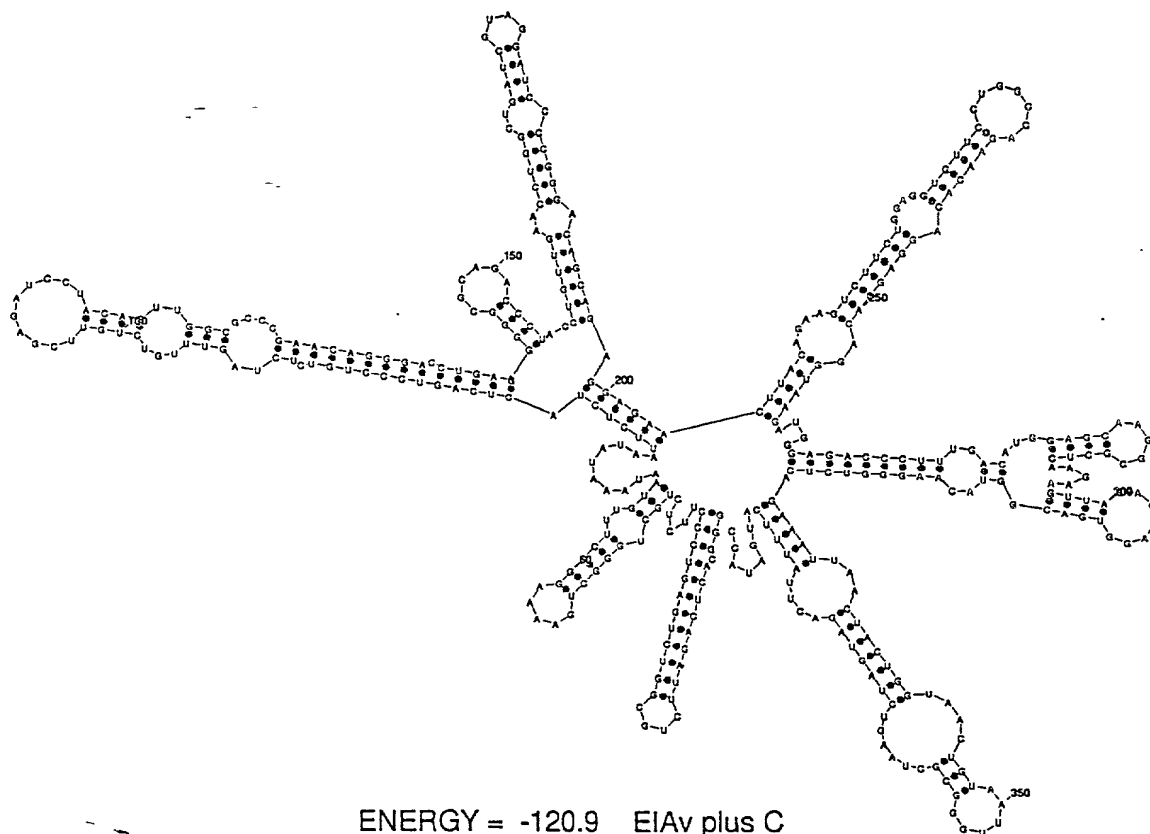


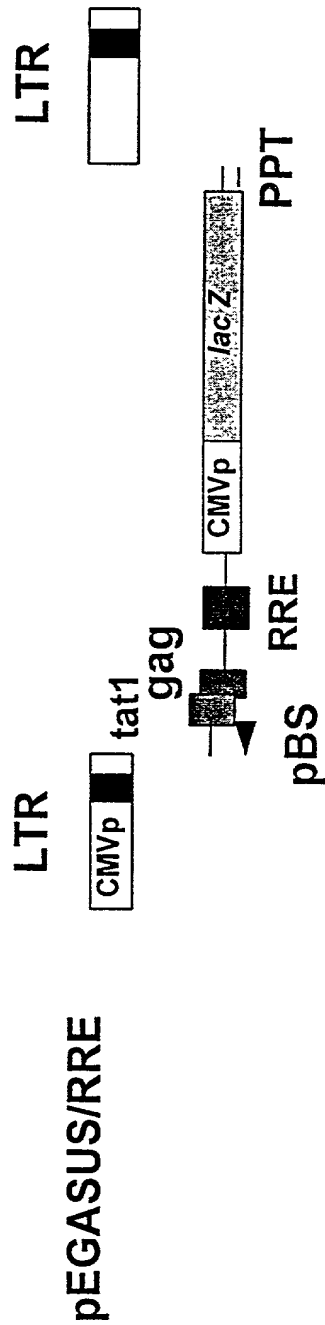
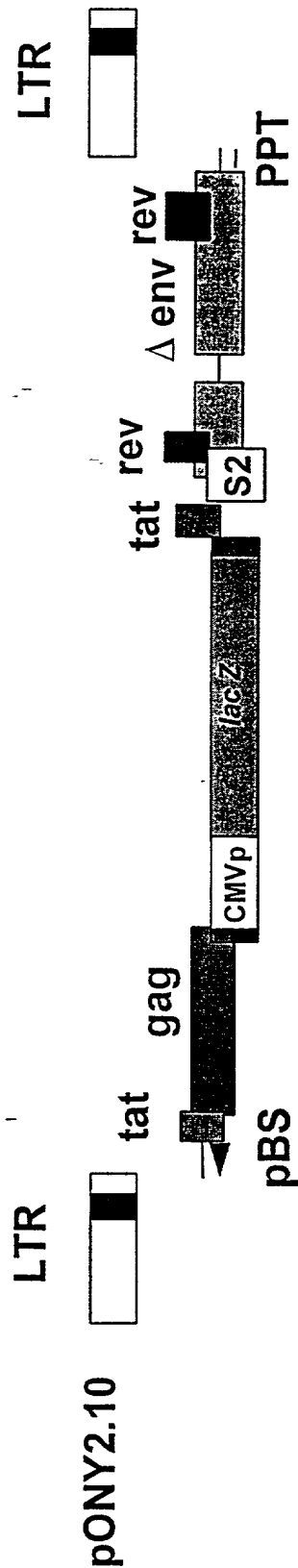
Figure 3



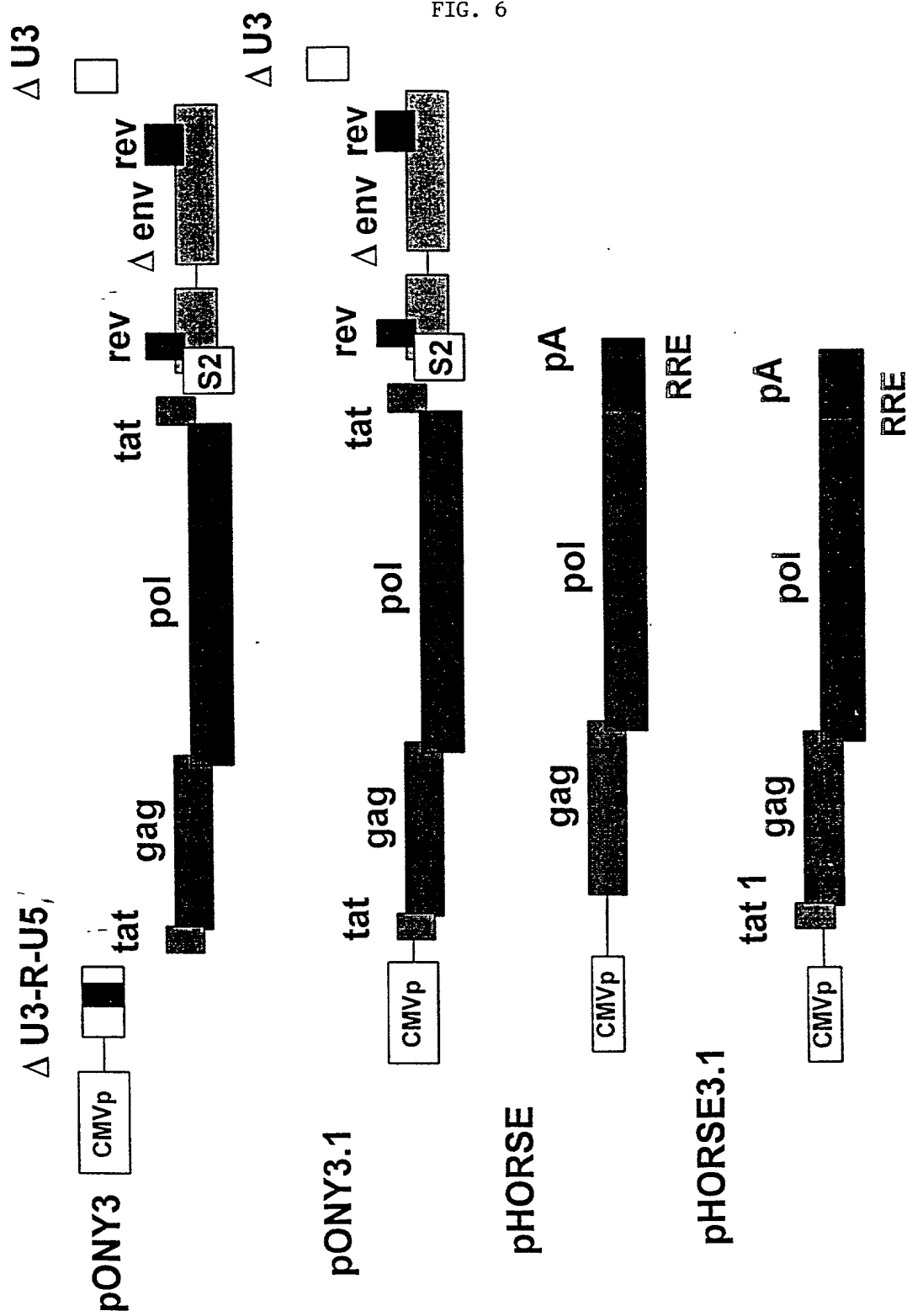
4/43
Figure 4



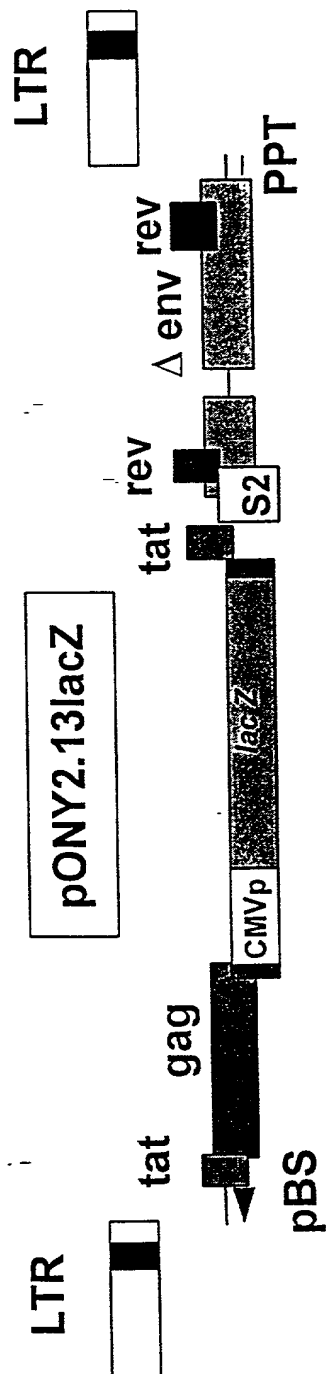
EIAV Vector Genomes



Variable	Mean	Standard deviation	Minimum	Maximum	Skewness	Kurtosis	Normality test
Age	35.2	12.5	20	65	0.15	3.2	0.98
Gender	0.52	0.50	0	1	-0.02	3.0	0.99
Marital status	0.68	0.48	0	1	0.05	3.1	0.99
Education	12.5	2.5	8	16	0.10	3.3	0.98
Income	1500	500	500	3000	0.20	3.4	0.97
Health status	0.75	0.43	0	1	-0.05	3.0	0.99
Employment status	0.60	0.49	0	1	0.02	3.1	0.99
Religious belief	0.55	0.50	0	1	-0.01	3.0	0.99
Political affiliation	0.50	0.50	0	1	0.00	3.0	0.99
Volunteering frequency	0.30	0.45	0	1	-0.10	3.2	0.98
Charitable donations	0.20	0.40	0	1	-0.15	3.3	0.97
Community involvement	0.40	0.50	0	1	-0.08	3.1	0.99
Environmental awareness	0.60	0.49	0	1	0.03	3.1	0.99
Animal welfare support	0.50	0.50	0	1	0.00	3.0	0.99
Human rights advocacy	0.45	0.50	0	1	-0.05	3.1	0.99
Global issues interest	0.55	0.50	0	1	0.01	3.0	0.99
Cultural heritage appreciation	0.65	0.48	0	1	0.04	3.1	0.99
Art and music appreciation	0.70	0.47	0	1	0.06	3.1	0.99
Historical sites interest	0.60	0.49	0	1	0.03	3.1	0.99
Language learning interest	0.50	0.50	0	1	0.00	3.0	0.99
Travel and exploration interest	0.60	0.49	0	1	0.03	3.1	0.99
Science and technology interest	0.55	0.50	0	1	0.01	3.0	0.99
Space exploration interest	0.50	0.50	0	1	0.00	3.0	0.99
Artificial intelligence interest	0.55	0.50	0	1	0.01	3.0	0.99
Robotics interest	0.50	0.50	0	1	0.00	3.0	0.99
Virtual reality interest	0.55	0.50	0	1	0.01	3.0	0.99
Gaming interest	0.60	0.49	0	1	0.03	3.1	0.99
Streaming services usage	0.70	0.47	0	1	0.06	3.1	0.99
Social media usage	0.80	0.40	0	1	0.10	3.2	0.98
Online shopping frequency	0.60	0.49	0	1	0.03	3.1	0.99
Digital literacy level	0.75	0.43	0	1	-0.05	3.0	0.99
Smartphone ownership	0.90	0.30	0	1	-0.10	3.2	0.98
Internet usage frequency	0.85	0.35	0	1	-0.08	3.1	0.99
Cloud storage usage	0.70	0.47	0	1	0.06	3.1	0.99
Video conferencing usage	0.80	0.40	0	1	0.10	3.2	0.98
Online learning participation	0.60	0.49	0	1	0.03	3.1	0.99
Online news consumption	0.70	0.47	0	1	0.06	3.1	0.99
Online social networking	0.80	0.40	0	1	0.10	3.2	0.98
Online shopping cart usage	0.70	0.47	0	1	0.06	3.1	0.99
Online banking usage	0.80	0.40	0	1	0.10	3.2	0.98
Online government services usage	0.70	0.47	0	1	0.06	3.1	0.99
Online health services usage	0.60	0.49	0	1	0.03	3.1	0.99
Online education usage	0.70	0.47	0	1	0.06	3.1	0.99
Online entertainment usage	0.80	0.40	0	1	0.10	3.2	0.98
Online shopping frequency	0.60	0.49	0	1	0.03	3.1	0.99
Online banking usage	0.80	0.40	0	1	0.10	3.2	0.98
Online government services usage	0.70	0.47	0	1	0.06	3.1	0.99
Online health services usage	0.60	0.49	0	1	0.03	3.1	0.99
Online education usage	0.70	0.47	0	1	0.06	3.1	0.99
Online entertainment usage	0.80	0.40	0	1	0.10	3.2	0.98
Online shopping frequency	0.60	0.49	0	1	0.03		



EIAV Vector S2 Mutant



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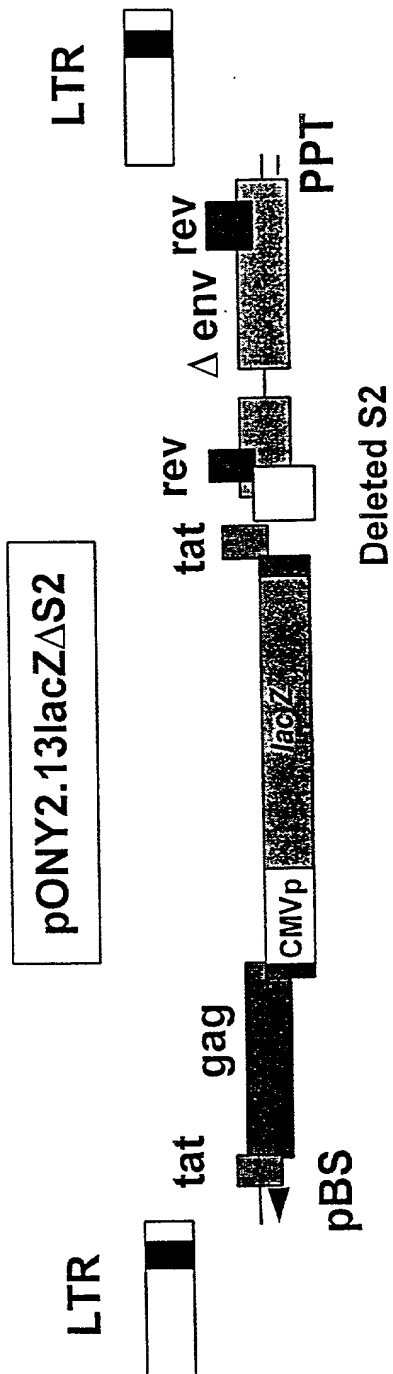


FIG. 7

ElAV gagpol S2 and dUTPase Mutants

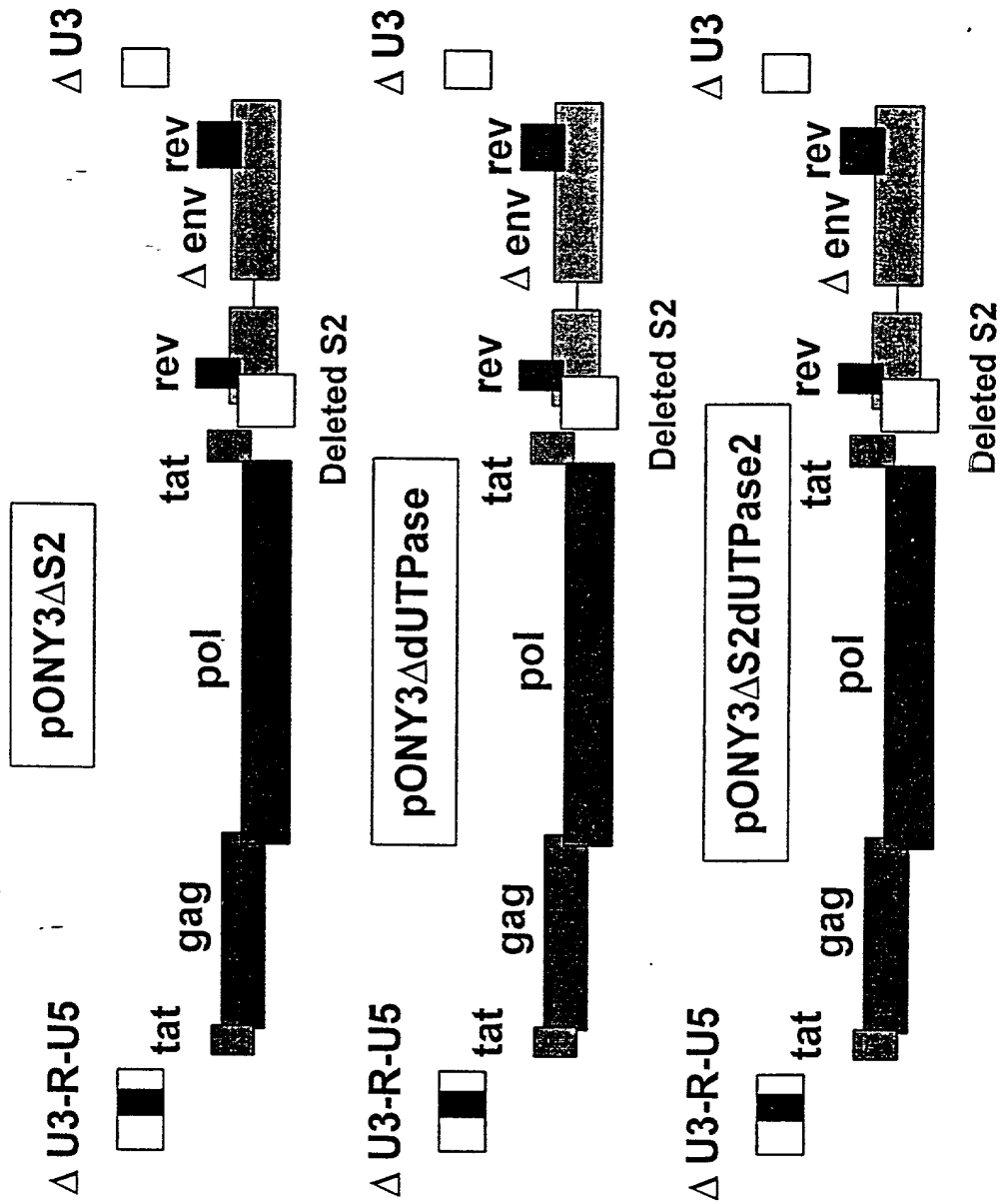


FIG. 8

ELAV Minimal System

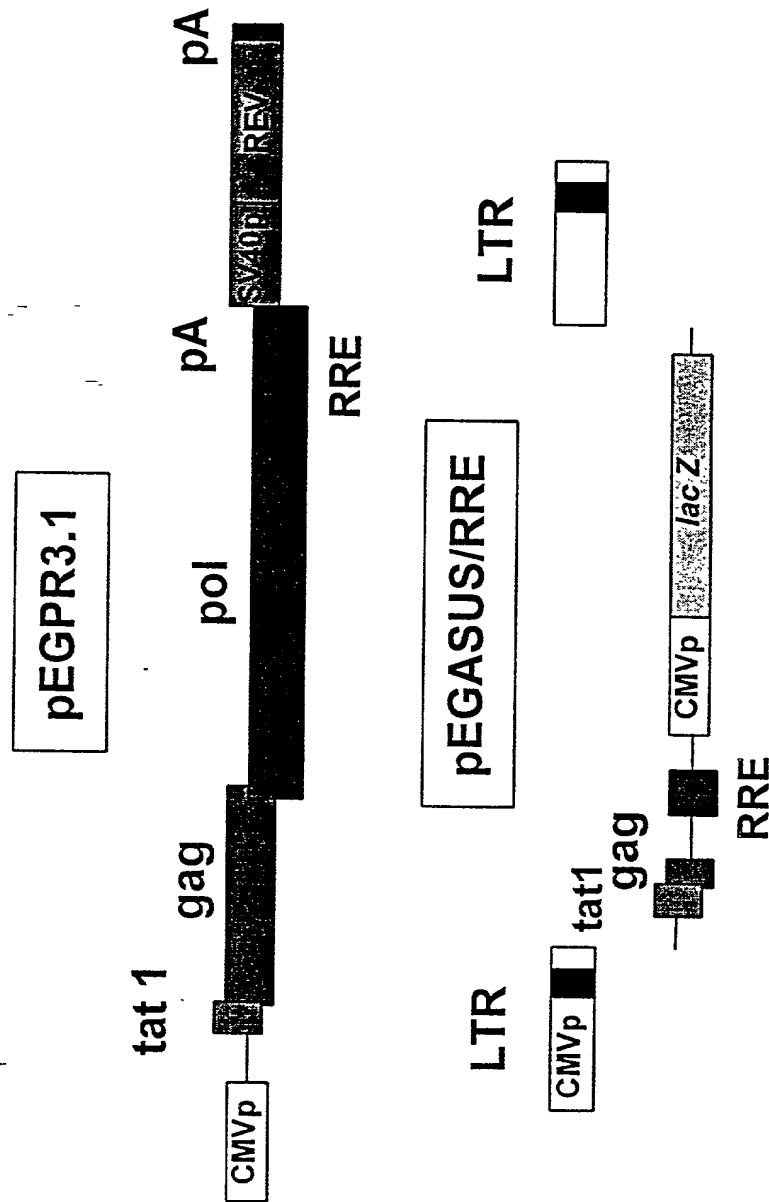
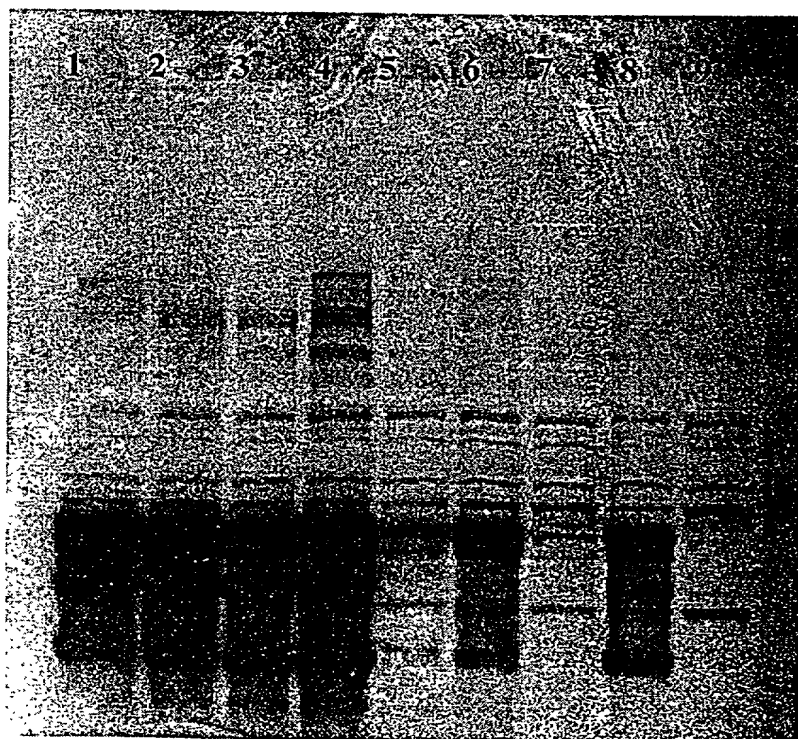


FIG. 9

FIG. 10



Titres
(l.f.u./ml)

1. pONY3.0 + pCI-Neo	(1.0×10^5)
2. pONY3.0 + pCI-Rev	(8.0×10^4)
3. pONY3.1 + pCI-Neo	(2.0×10^5)
4. pONY3.1 + pCI-Rev	(1.8×10^5)
5. pHORSE + pCI-Neo	(1.0×10^1)
6. pHORSE + pCI-Rev	(2.0×10^3)
7. pHORSE3.1 + pCI-Neo	(2.0×10^2)
8. pHORSE3.1 + pCI-Rev	(8.0×10^4)
9. pCI-Neo	(<1.0)

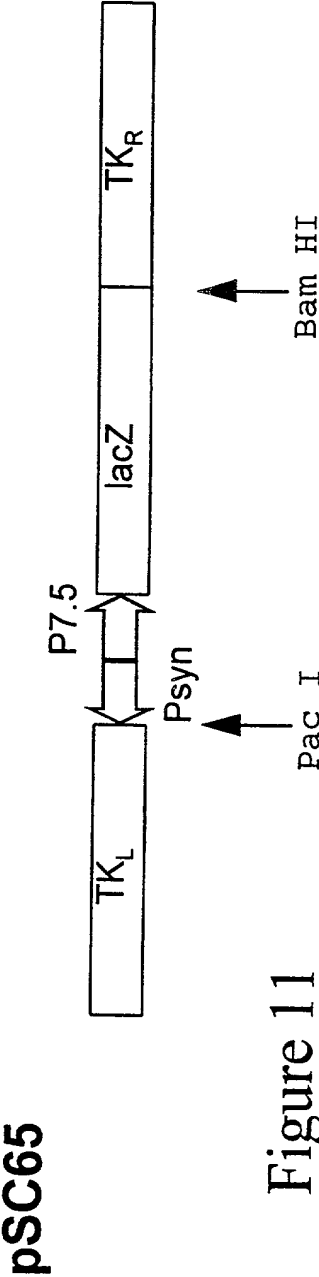
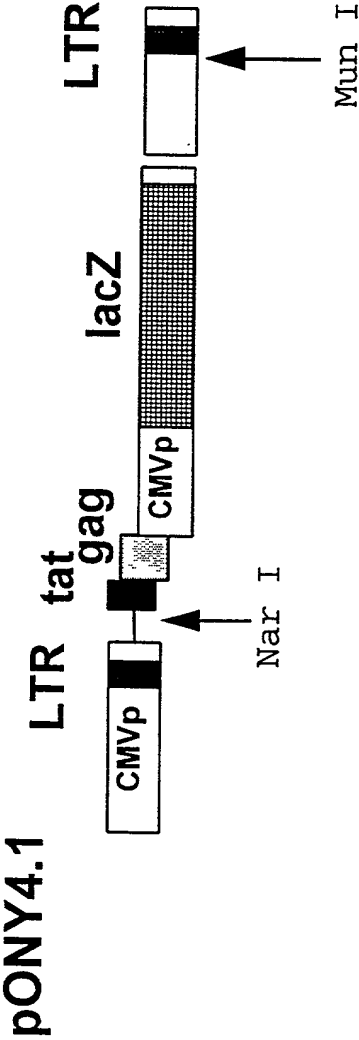
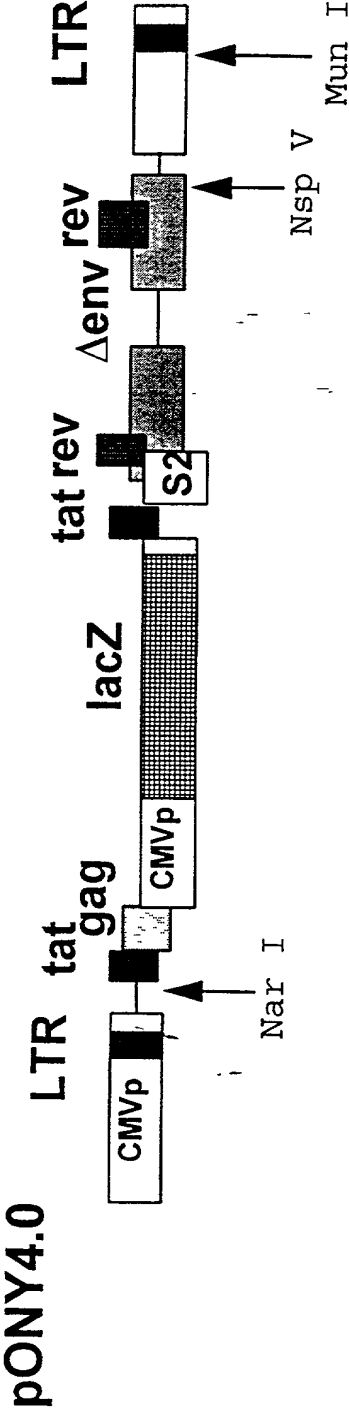


Figure 11

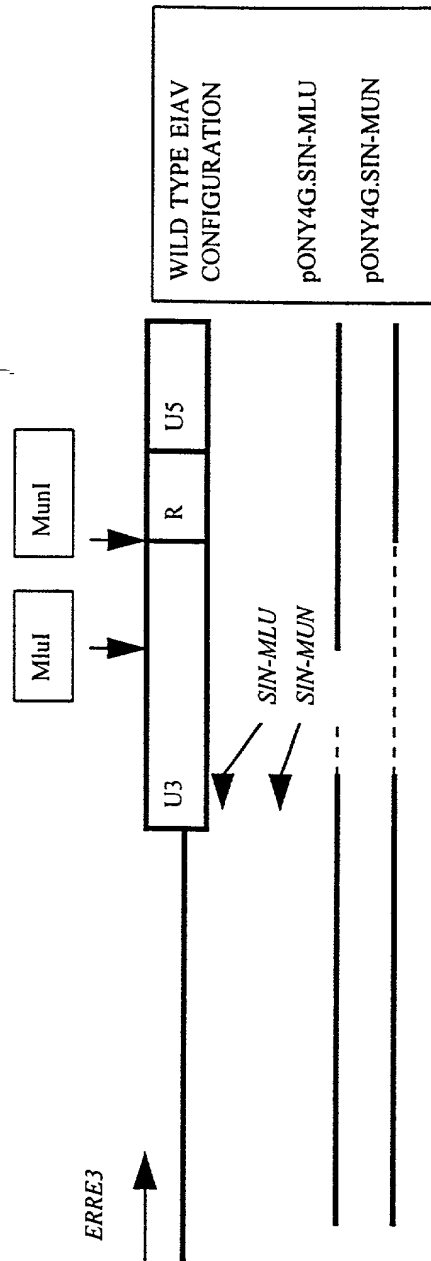


Figure 12

Figure 13

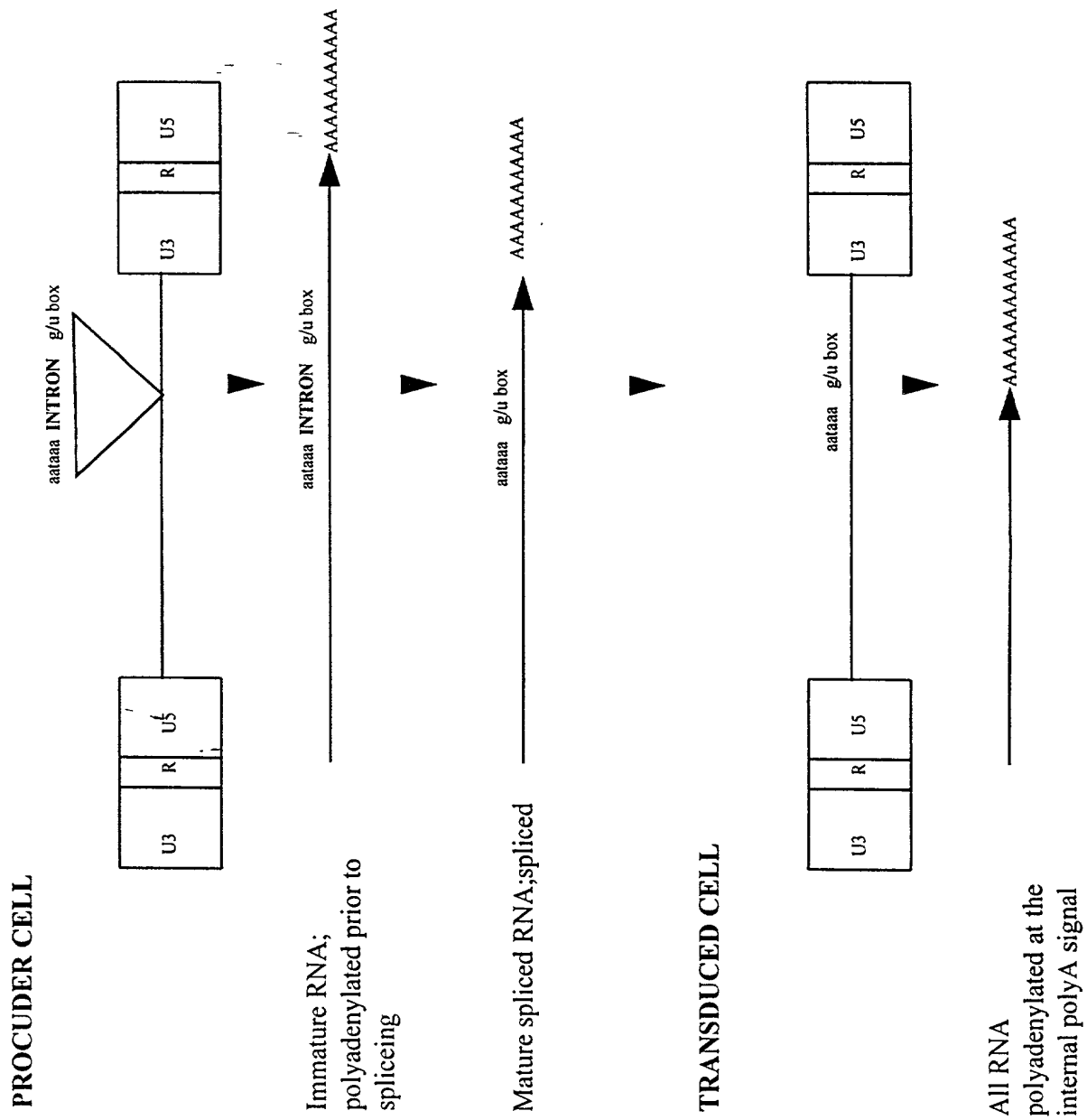
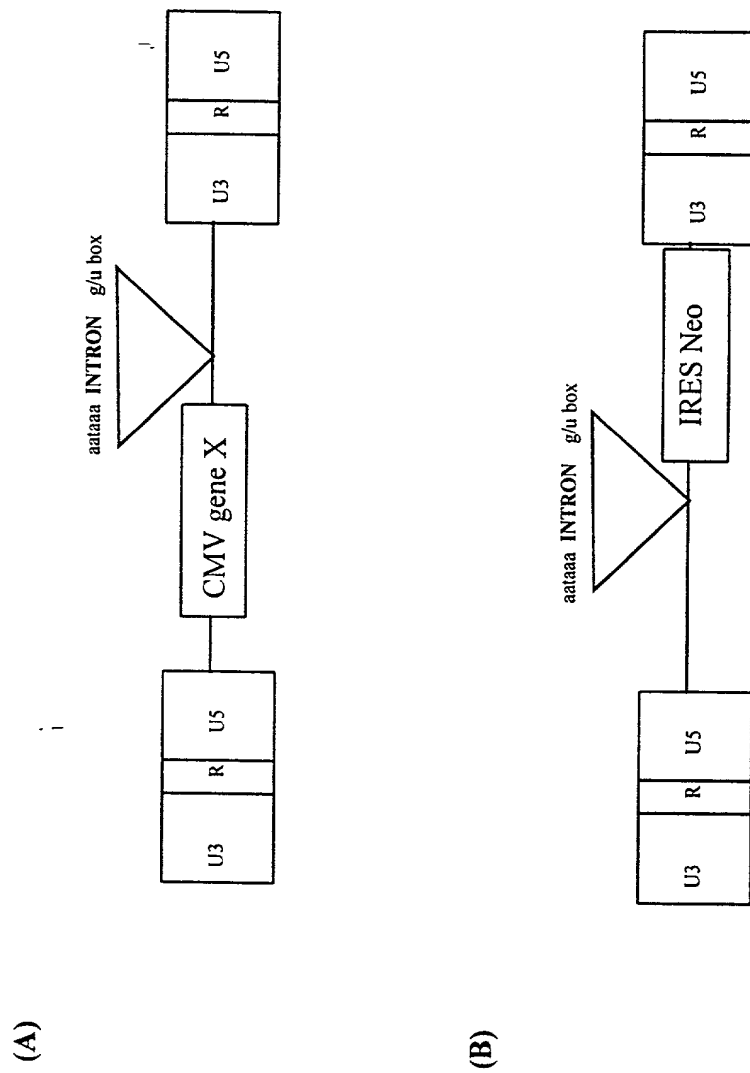


Figure 14



(A)

5'-tcgtcgagcgccgAATAAAgggcag/gtaagatcaagggtac-3'

PstI/EagI

exon//intron border

intron/exon border

3'-gaaggtgtc/cacagggtgagggtcaagACACACAAACCAAAAAACACACAgccggcgacgtcgct-5'

EagI/PstI

sd

sa

CMV

pCI (Promega)

(B) AATAAGGgag//gtaag-----INTRON-----ctcacag//ggtccactccagtcTGTGTGTTGGTTTTTTTGTGTGT

(C) AATAAGGcaggigtccactcccagttcTGTGTGTGGTTTTTGTGTGT

aataaa	23 base pair space	g/u box
--------	--------------------	---------

Figure 15

Figure 16

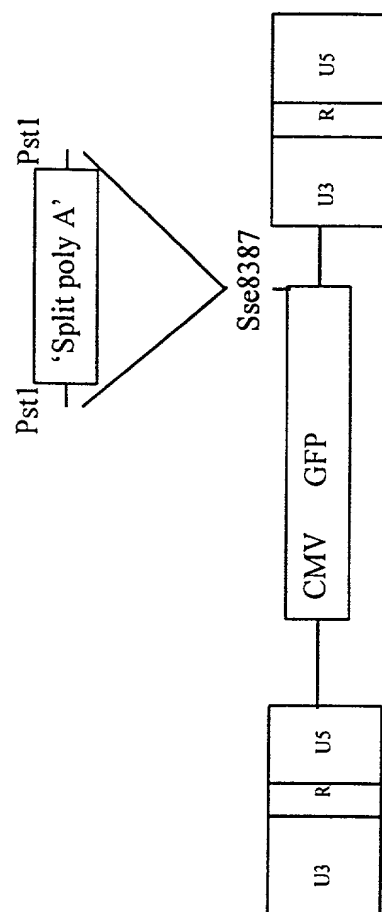


Figure 17

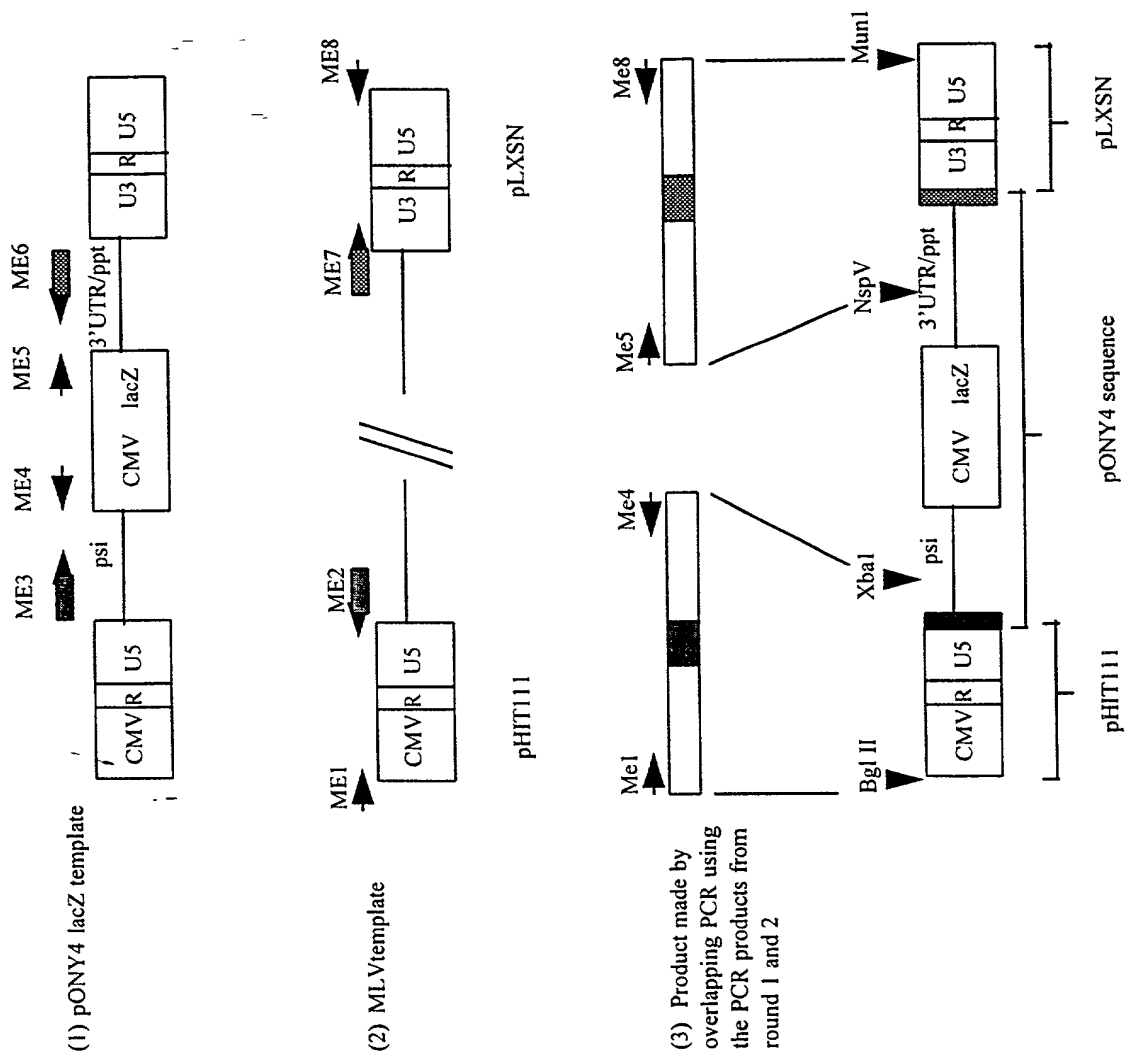


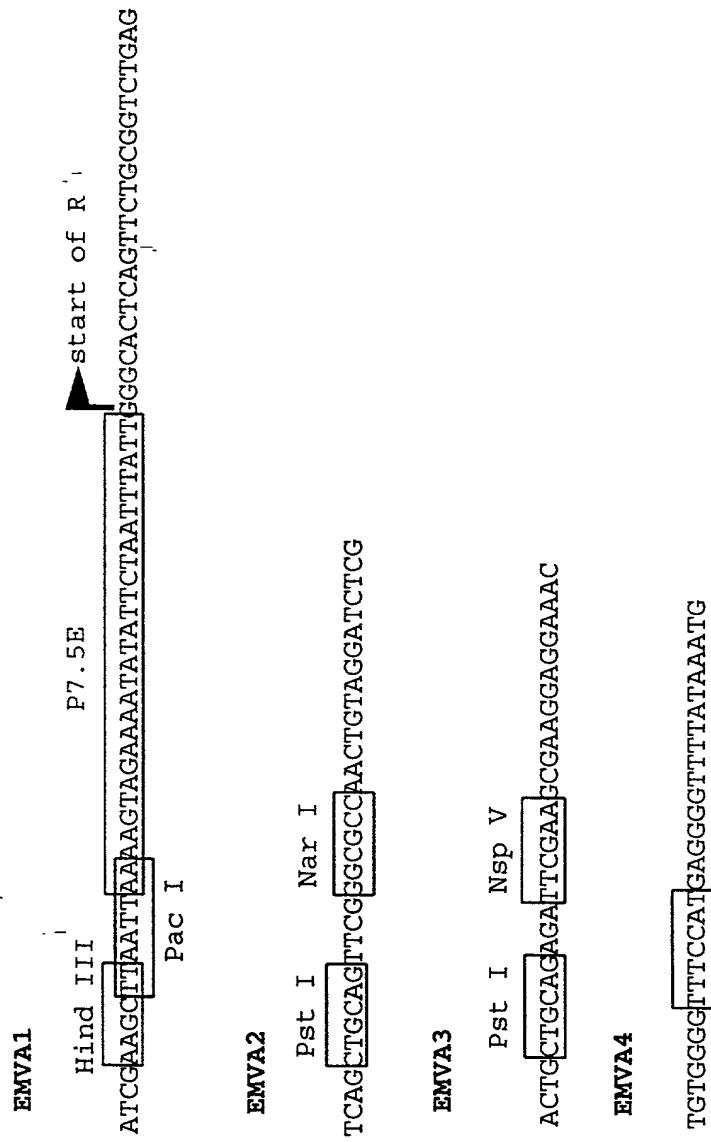
Figure 18

Me1 5'-tcgatagatctgagtcggttacataacttacgg-3'
Me2 5'-gatctcgaacagacaaactagagacaggggactgcaaacagcaaggagccttiattggg-3'
Me3 5'-gtccctgtctctagtttgtctgttcggagat-3'
Me4 5'-ggggatccactagttcttagagatatattc-3'
Me5 5'-cccttagacctggagattcgaagcggaaag-3'
Me6 5'-ccaaacctacagggtgggtcttcttattacaagggttatgagagcatcagcaac-3'
Me7 5'-aatgaaagacccacactgtagggtttgg-3'
Me8 5'-gtagagtgcacaattgccagtatacactccgctatcgctac-3'

Figure 19

Figure 19 cont.

Figure 20



The boxed sequence is the mutated TTTTAT sequence within U3.

Figure 21

EMVA5

CCCTCATGGAATATGCCACAGTTCCCCCCTTG

The boxed sequence is the mutated TTTTAT sequence within U3.

EMVA6

Bgl II Mun I

CTGAGATCTGAATCTGAGTGCCCAATGTCAG

EMVA7

Mun I

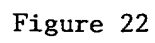
CTGACAATTGGGCACTCAGATTC

EMVA8

Bgl II

CATGAGATCTTAAAAAATGATGAGAGAATTATTATTAC

The AAAAAAAA sequence contains the termination signal (TTTTNT) for the early promoter.



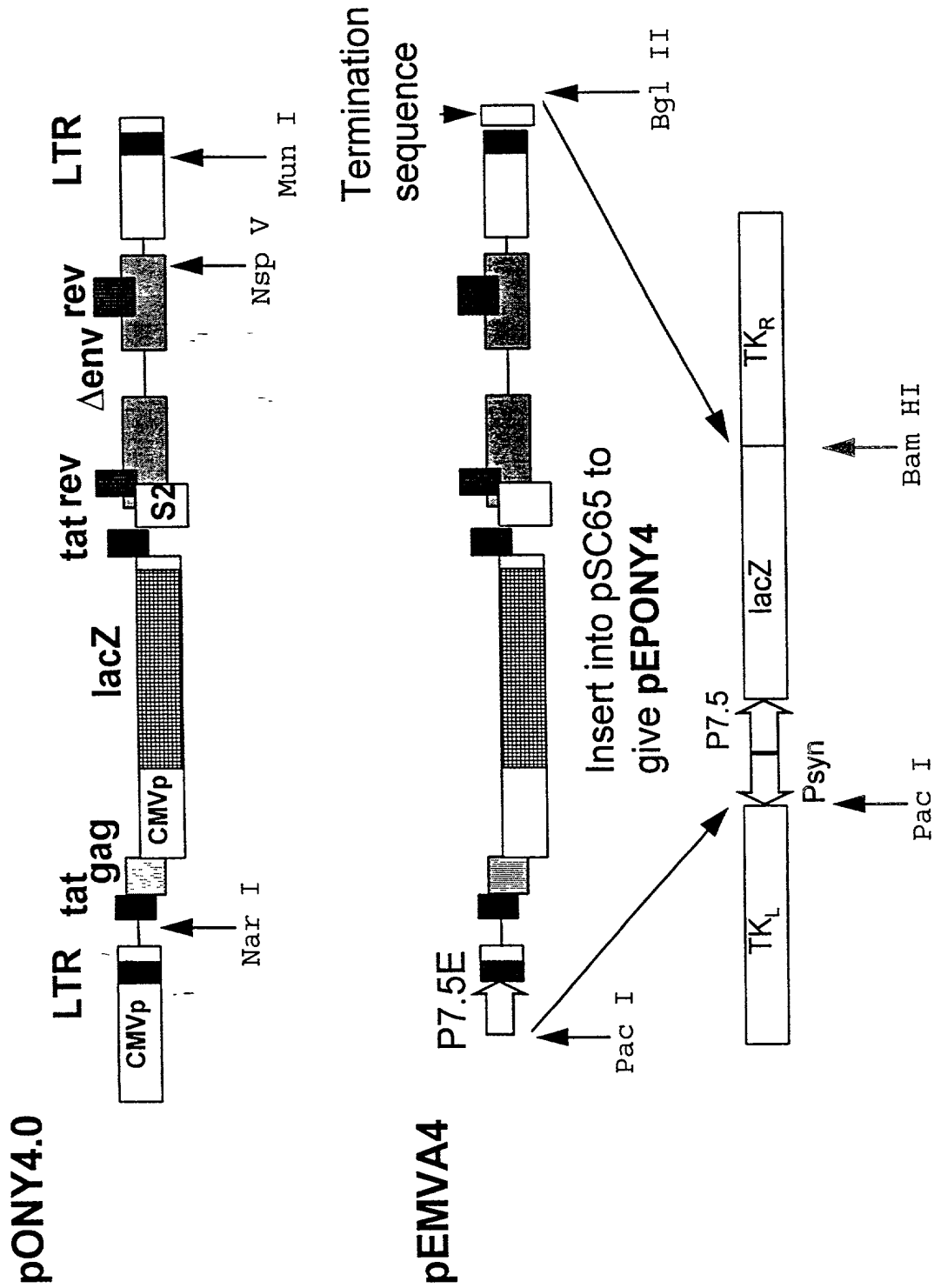


Figure 23

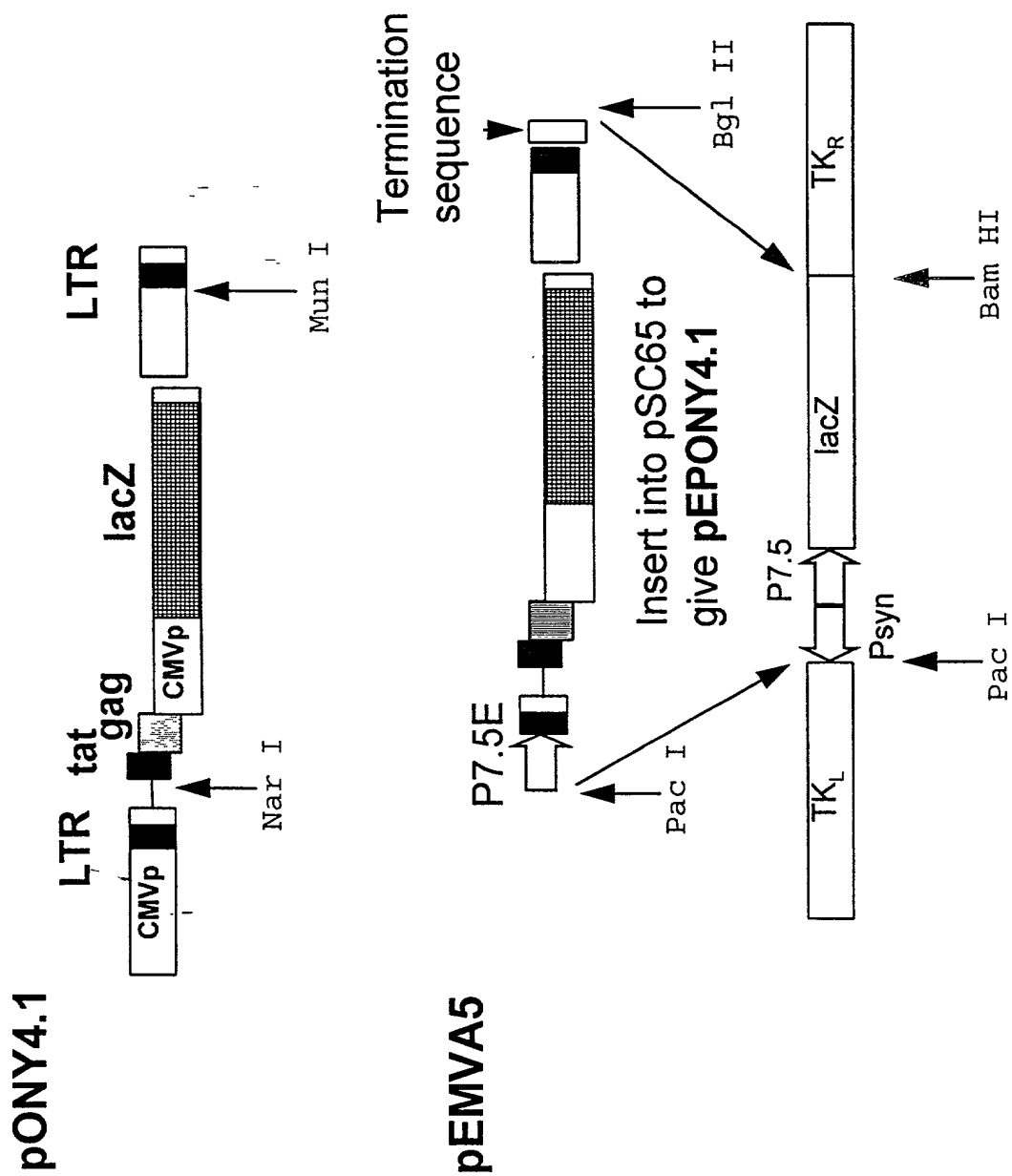


Figure 24

EMVA9

Pac I Psyn

AGCTTAATTA¹AAAAAATTGAAATTTTATTATTTT²TTTTTTGGAAATATAAATAAGCTCGAAGT

CTGAGTGGCCCTGATGAGCGGCCGAAAGGCCCGCGAAACCTGCGTCGACACGCAGGTC

GGGCACTCAGATTCTGCGGTC

▶ start of R after cleavage by the hammerhead ribozyme.

The ribozyme sequence is undelined.

Figure 25

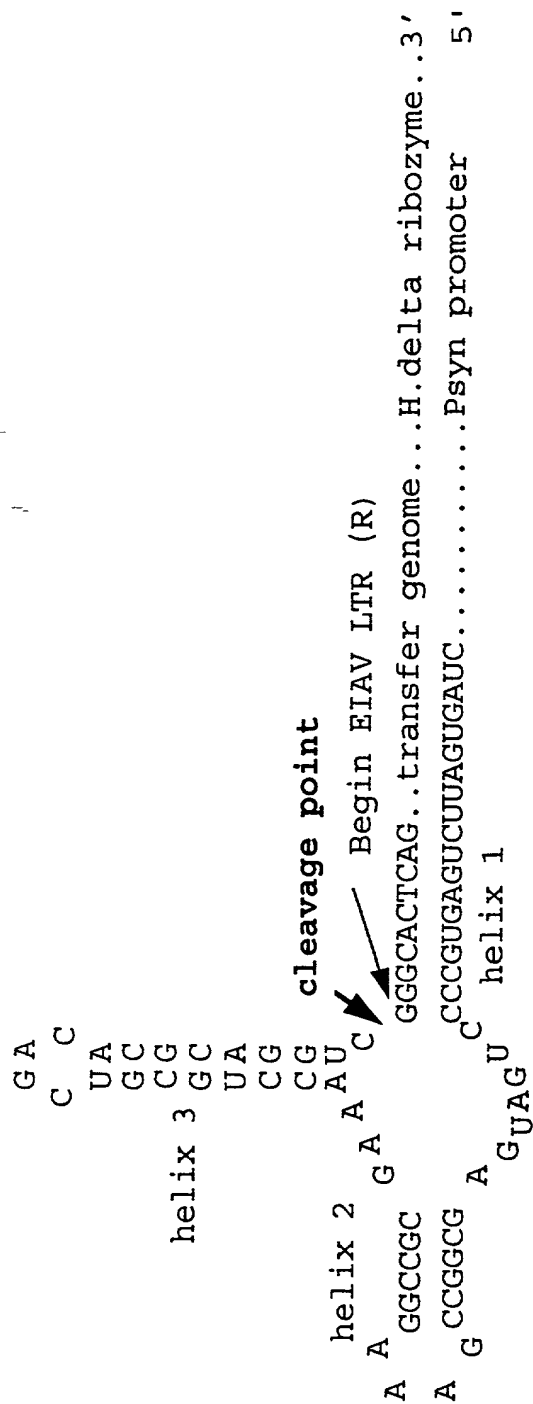


Figure 26

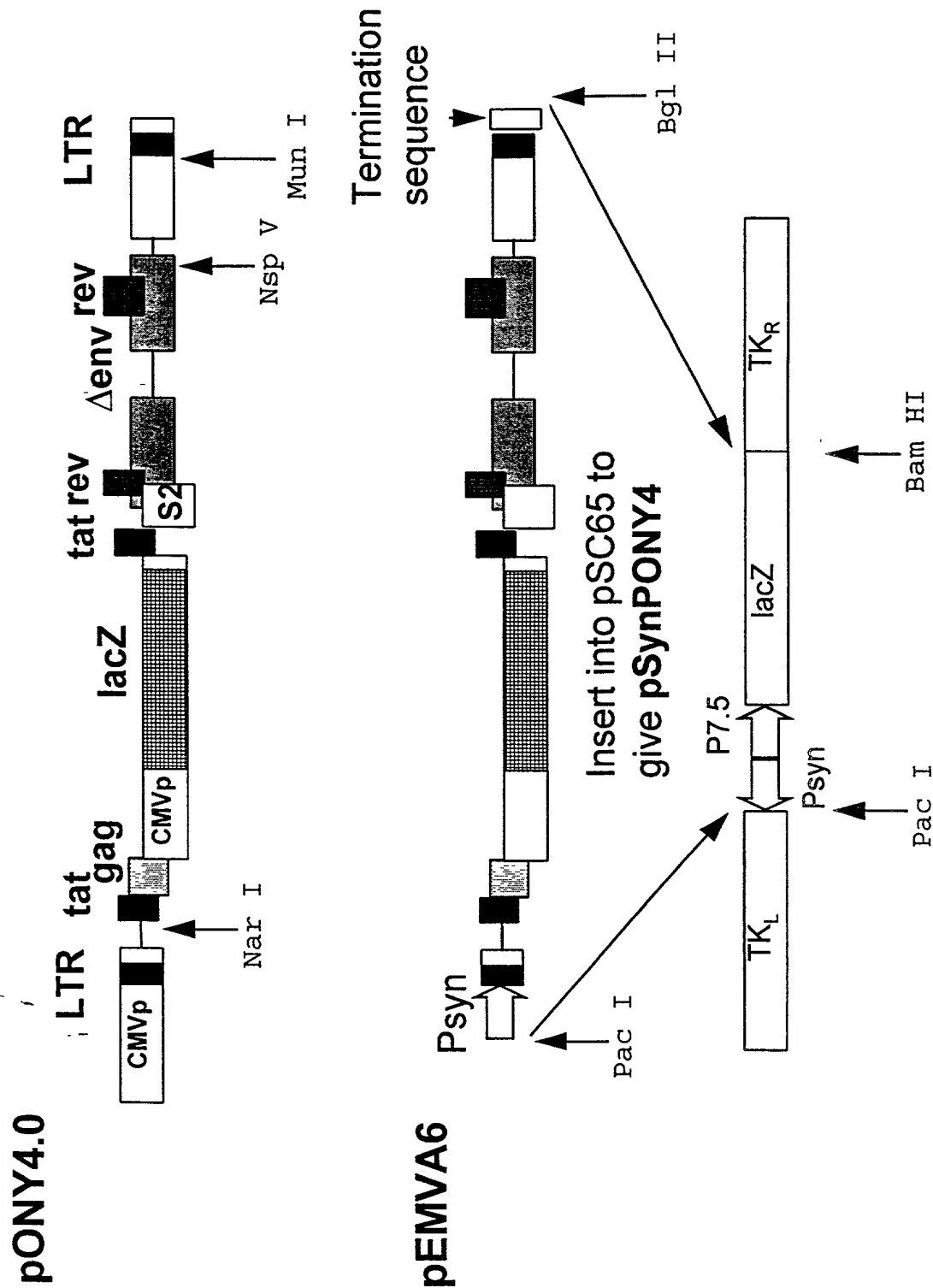


Figure 27

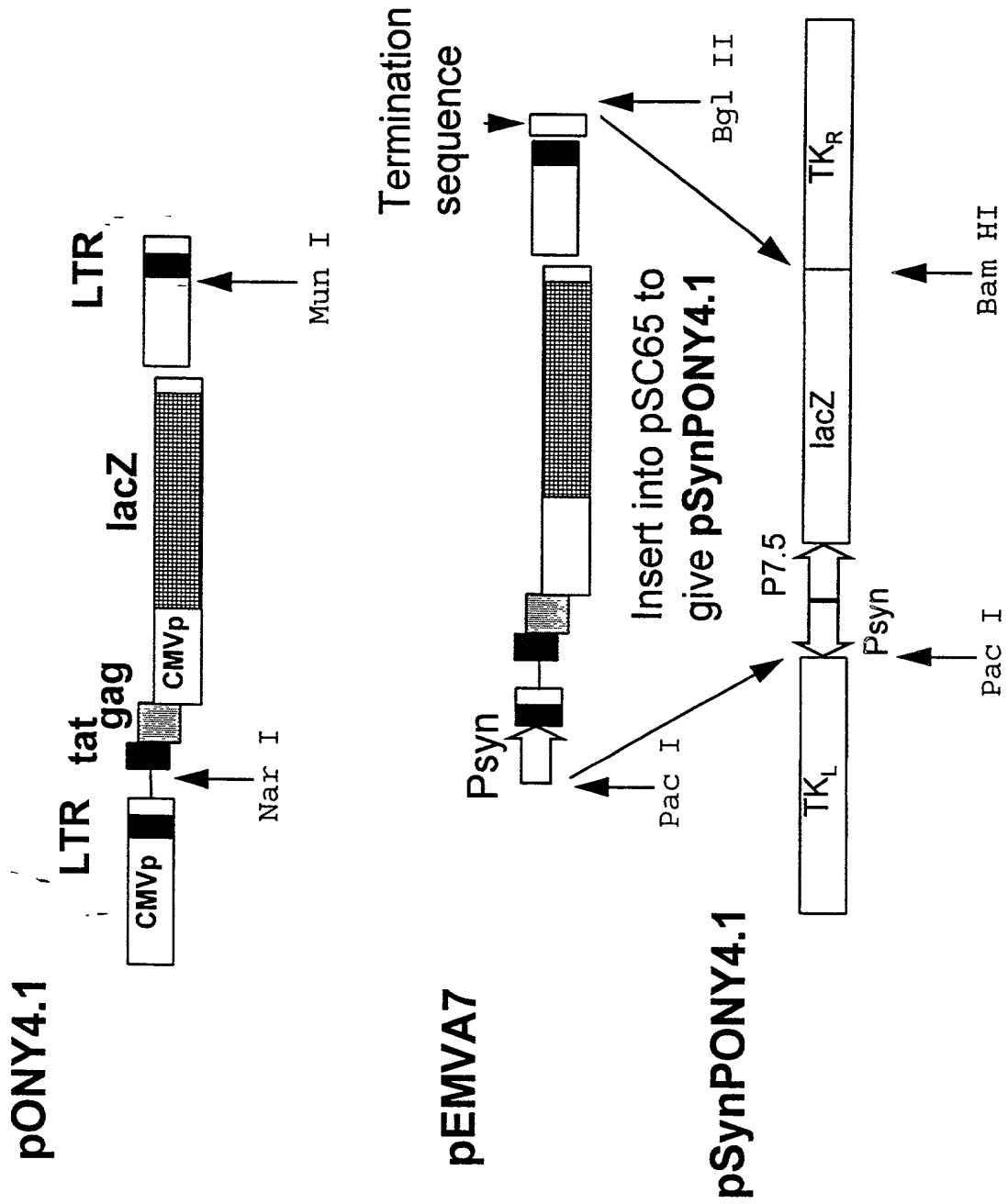



Figure 28

EMVA10

Pac I : T7 promoter  start of R
 ATCGTTAATTAAATAATACGACTCACTATAGGGCACTCAGATTCTGCGGTC

EMVA11

Bgl II T7 termination sequence
 CATGAGATCTCAAAAAACCCCTCAAGACCCGTTTAGAGGGCCCCAAGGGGTTATGCTAGTGATGAGAGAATTATATTATTAC

Figure 29

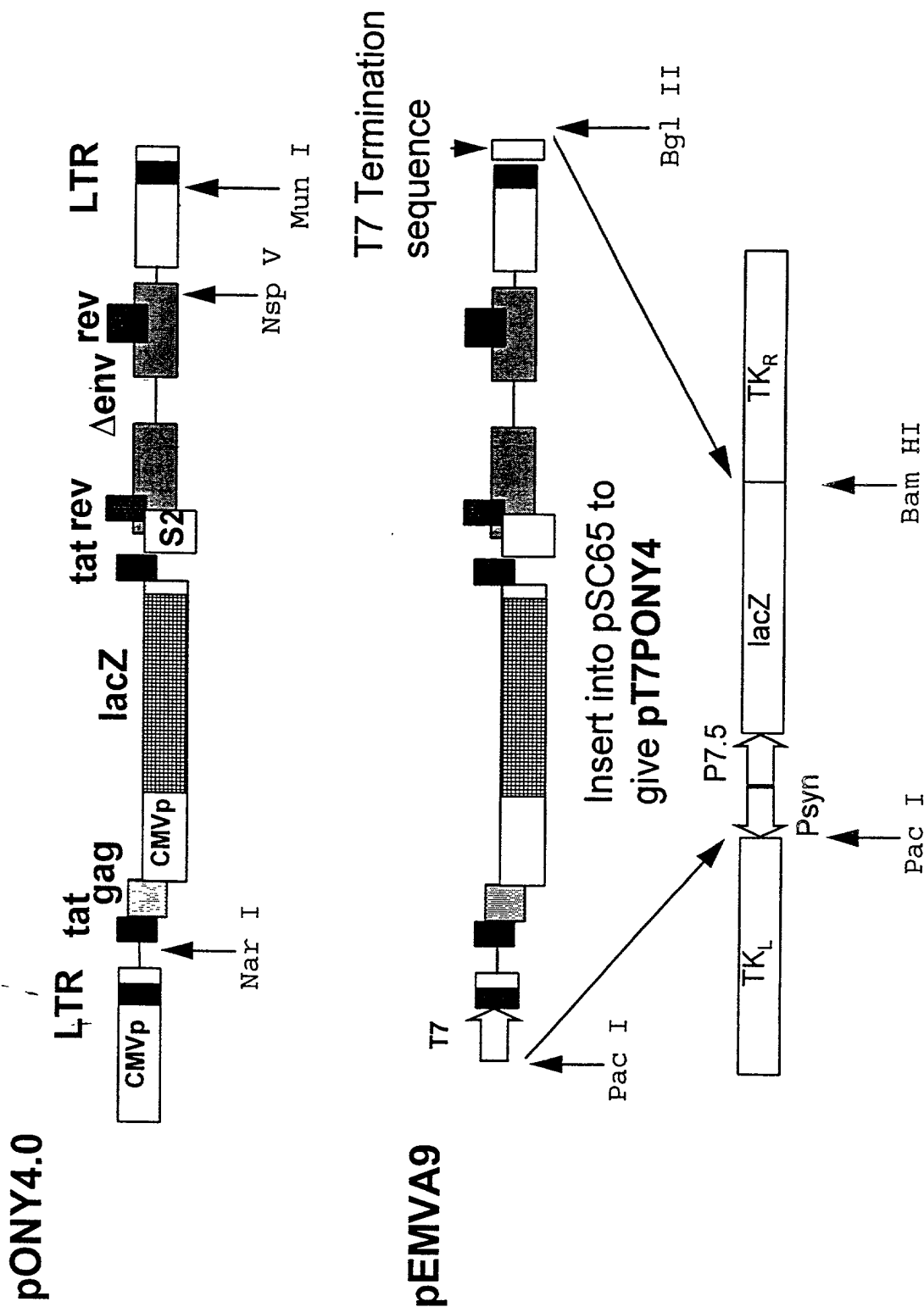


Figure 30

Figure 31

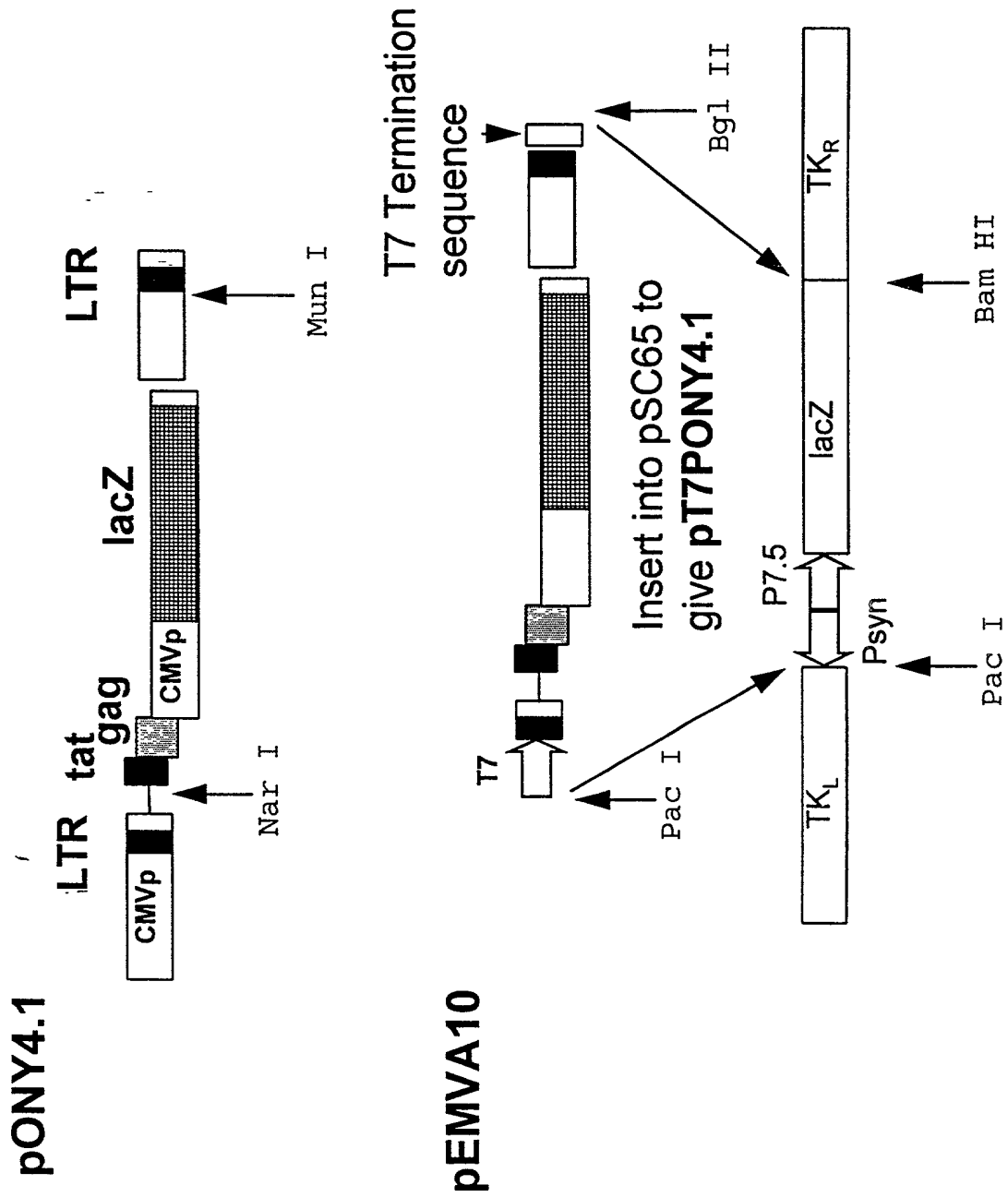


Figure 32

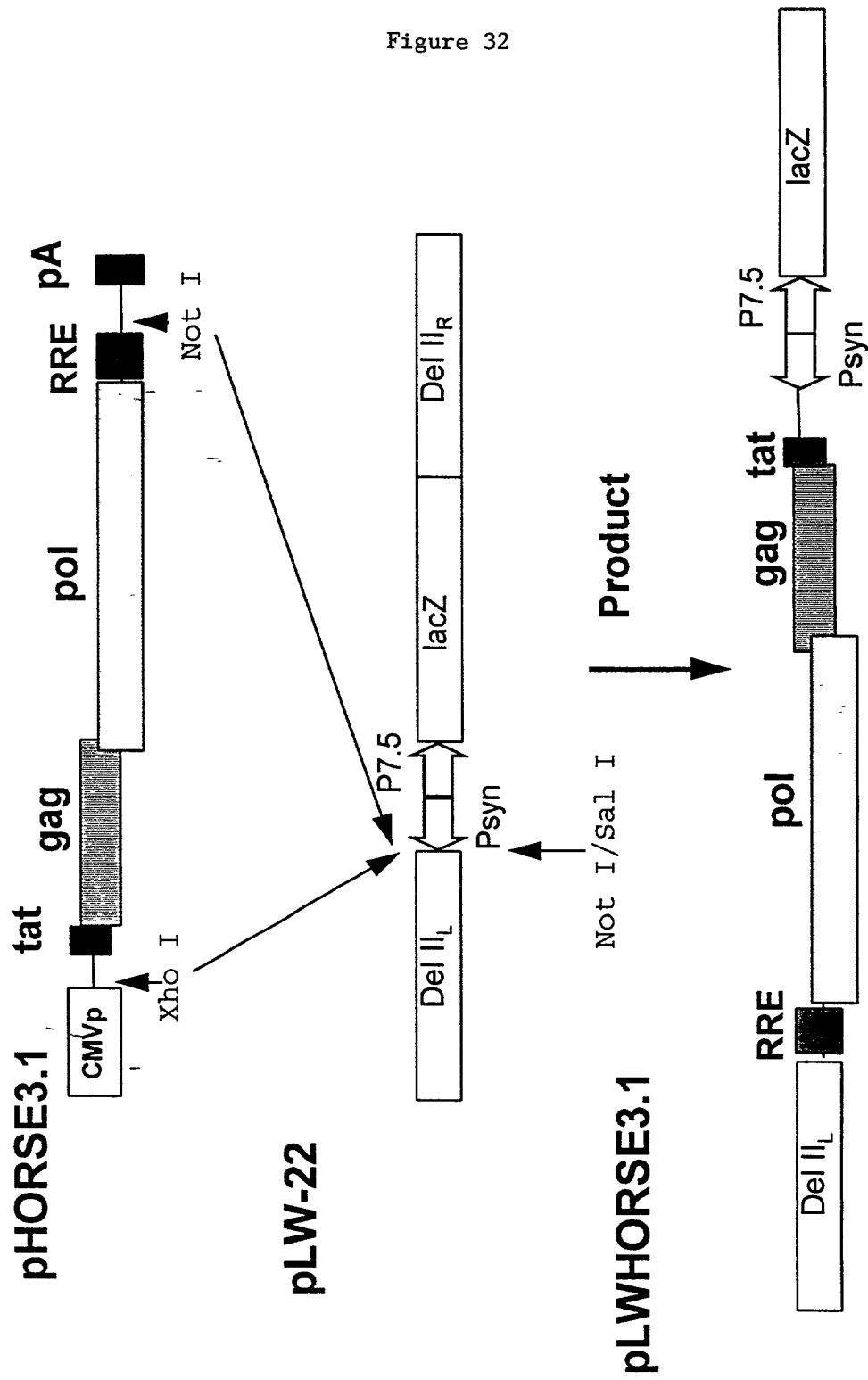


Figure 33

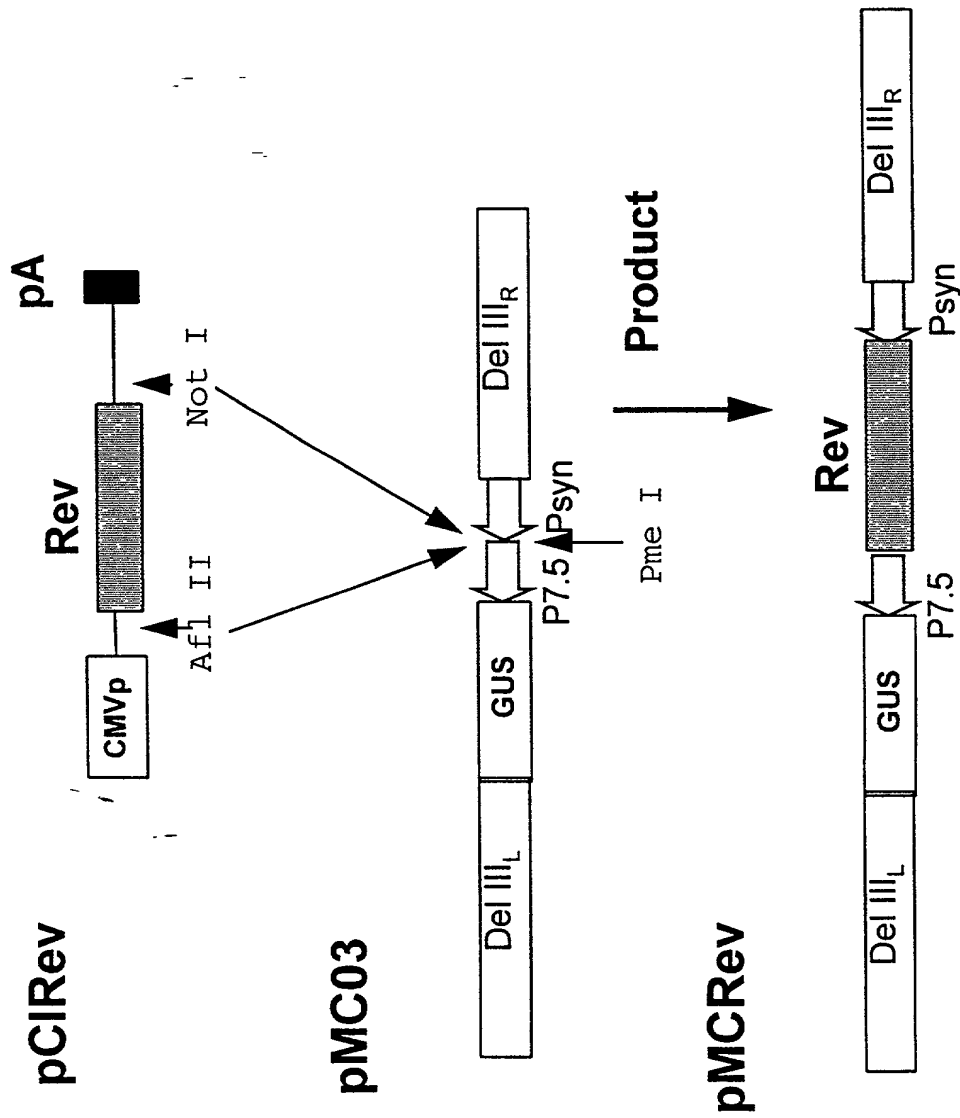


Figure 34

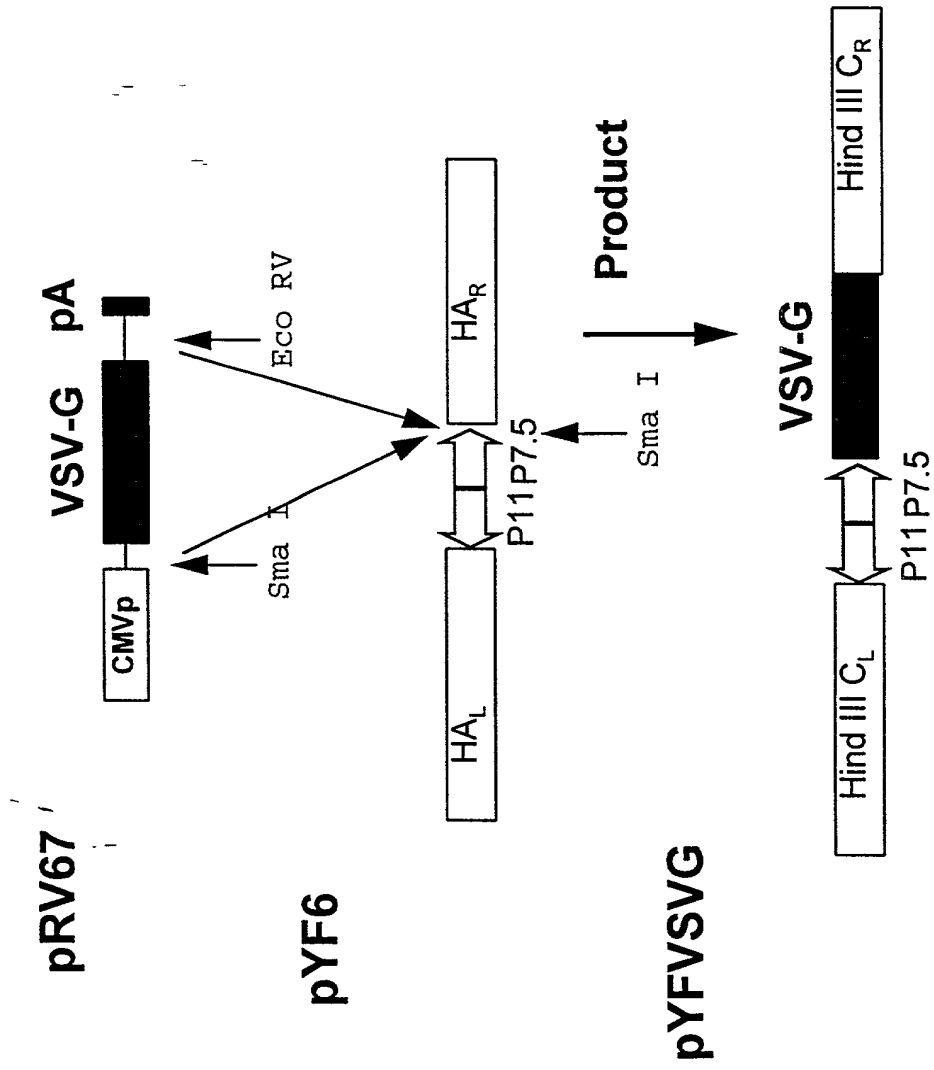
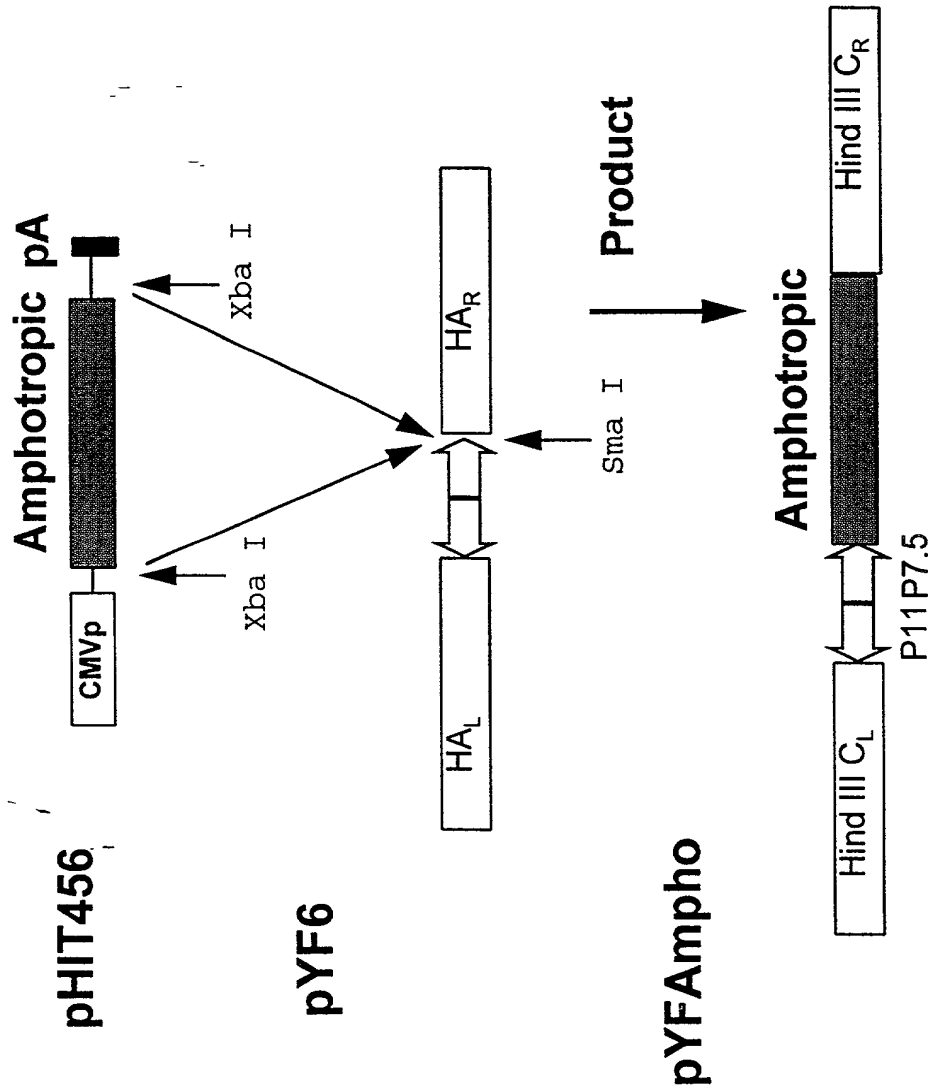


Figure 35



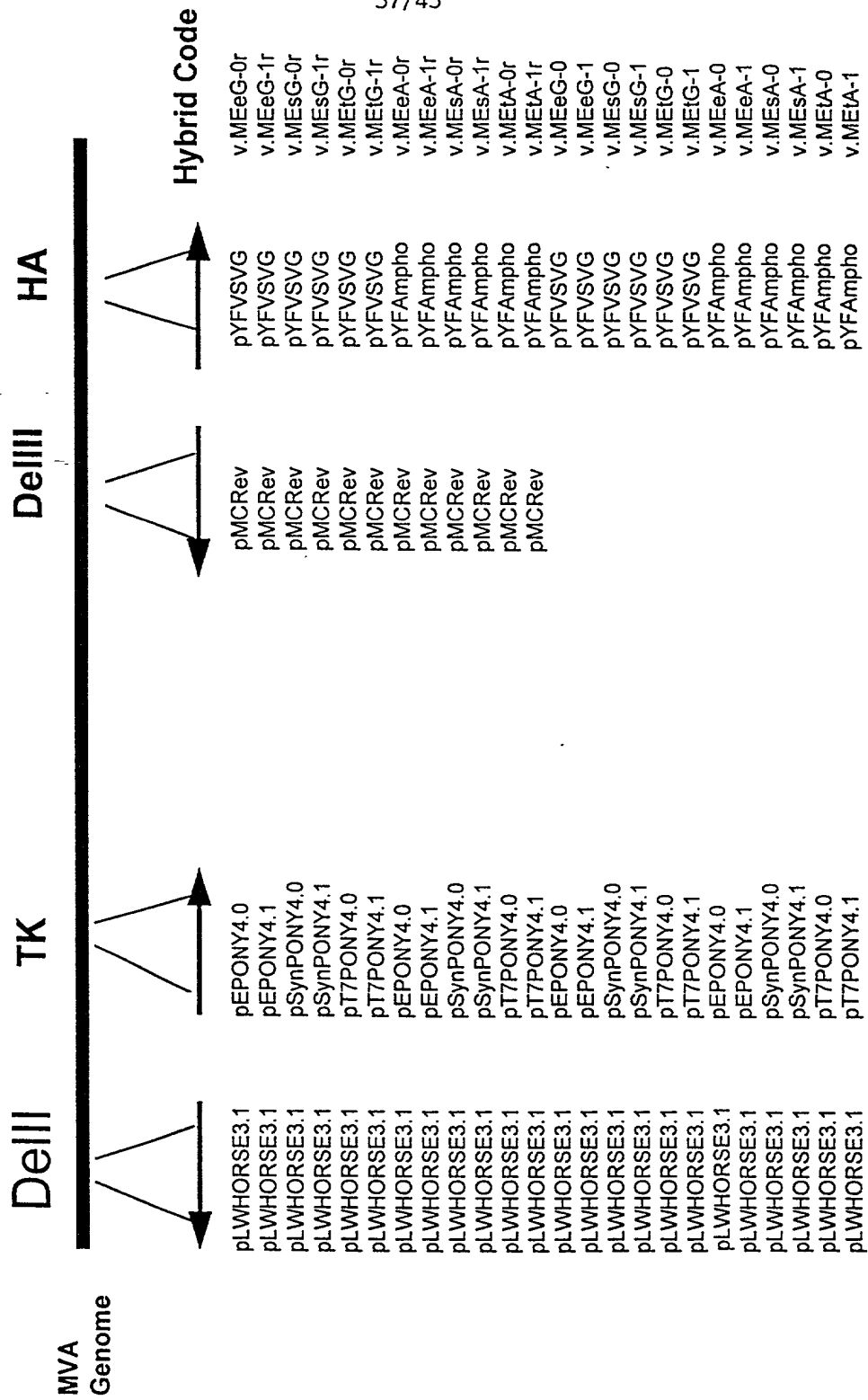


Figure 36

FIGURE 37

1/3

AGCTTTTTCGATCAATAAATGGATCACAACCAGTATCTCTTAACGATGTTCTTCGCAGATGATGAT
 TCATTTTTTAAGTATTTGGCTAGTCAAGATGATGAAATCTTCATTATCTGATATATTGCAAATCAC
 TCAATATCTAGACTTTCTGTTATTATTATTGATCCAATCAAAAAATAAATTAGAAGCCGTGGGTCA
 TTGTTATGAATCTCTTTCAGAGGAATACAGACAATTGACAAAATTCACAGACTTTCAAGATTTTAA
 AAACTGTTTAAACAAGGTCCCTATTGTTACAGATGGAAGGGTCAAACCTAATAAAGGATATTTGTT
 CGACTTTGTGATTAGTTTGTATGCGATTCAAAAAAGAATCCTCTCTAGCTACCACCGCAATAGATCC
 TGTTAGATACATAGATCCTCGTCGCAATATCGCATTTTCTAACGTGATGGATATATTAAAGTCGAA
 TAAAGTGAACAATAATTAAATCTTTATTGTATCATGAACGGCGGACATATTAGTTGATAATCGG
 CCCCATGATTTTTCAGGTAAAAGTACAGAATTAATTAGACGAGTTAGACGTTATCAAATAGCTCAATA
 TAAATGCGTGACTATAAAAATATTCTAACGATAATAGATACGGAACGGGACTATGGACGCATGATAA
 GAATAATTTTGAAGCATTTGGAAGCAACTAAACTATGTGATCTCTTGGAATCAATTACAGATTTCTC
 CGTGATAGGTATCGATGAAGGACAGTTCTTTCAGACATTGTTGAATTAGATCGATAAAAAATTAAT
 TAATTACCCGGGTACCAGGCCTAGATCTGTGCGACTTCGAGCTTATTTATATTCCAAAAAATAAATA
 TAAAATTTCAATTTTAAAGCTTTCACATAATTCAAACCCACCCGCTTTTATAGTAAGTTTTCAC
 CCATAAATAATAAATACAATAATTAATTTCTCGTAAAAGTAGAAAATATATTCTAATTTATTGCAC
 GGTAAGGAAGTAGATCATAACTCGAGCATGGGAGATCCCGTCGTTTTACAACGTCGTGACTGGGAA
 AACCTGGCGTTACCCAACTTAATCGCCTTGCAGCACATCCCCCTTTTCGCCAGCTGGCGTAATAGC
 GAAGAGGCCCGCACCGATCGCCCTTCCCAACAGTTGCGCAGCCTGAATGGCGAATGGCGCTTTGCC
 TGGTTTCCGGCACCAGAAGCGGTGCCGAAAGCTGGCTGGAGTGCATCTTCTGAGGCCGATACT
 GTCGTCGTCCCTCAAACCTGGCAGATGCACGGTTACGATGCGCCCATCTACACCAACGTAACCTAT
 CCCATTACGGTCAATCCGCCGTTTGTTCACGAGAGATCCGACGGGTGTTACTCGCTCACATTT
 AATGTTGATGAAAGCTGGCTACAGGAAGGCCAGACGCGAATTATTTTGGATGGCGTTAACTCGGCG
 TTTTCATCTGTGGTGCAACGGGCGCTGGGTGGTTACGGCCAGGACAGTCGTTTGCCGTCTGAATTT
 GACCTGAGCGCATTTTTACGCGCCGGAGAAAACCGCCTCGCGGTGATGGTGCTGCGTTGGAGTGAC
 GGCAGTTATCTGGAAGATCAGGATATGTGGCGGATGAGCGGCATTTTCCGTGACGTCTCGTTGCTG
 CATAAACCGACTACACAAATCAGCGATTTCCATGTTGCCACTCGCTTTAATGATGATTTACAGCCGC
 GCTGTACTGGAGGCTGAAGTTTCAAGTGTGCGGCGAGTTGCGTGACTACCTACGGGTAACAGTTTCT
 TTATGGCAGGGTGAAACGCAGGTGCGCAGCGGCACCGCGCCTTTTCGGCGGTGAAATTATCGATGAG
 CGTGGTGGTTATGCCGATCGCGTCACACTACGTCTCAACGTGAAAAACCCGAACTGTGGAGCGCC
 GAAATCCCGAATCTCTATCGTGCGGTGGTTGAAGTGCACACCGCCGACGGCACGCTGATTGAAGCA
 GAAGCCTGCGATGTCGGTTTCCGCGAGGTGCGGATTGAAAATGGTCTGCTGCTGCTGAACGGCAAG
 CCGTTGCTGATTGAGGCGTTAACCGTCACGAGCATCATCCTCTGCATGGTCAGGTGATGGATGAG
 CAGACGATGGTGAGGATATCCTGCTGATGAAGCAGAACAACTTTAACGCCGTGCGCTGTTTCGCAT
 TATCCGAACCATCCGCTGTGGTACACGCTGTGCGACCGCTACGGCCTGTATGTGGTGGATGAAGCC
 AATATTGAAACCCACGGCATGGTGCCAATGAATCGTCTGACCGATGATCCGCGCTGGCTACCGGCG
 ATGAGCGAACGCGTAACGCGAATGGTGCAGCGCGATCGTAATCACCCGAGTGTGATCATCTGGTCG
 CTGGGGAATGAATCAGGCCACGGCGCTAATCACGACGCGCTGTATCGCTGGATCAAATCTGTGAT
 CCTTCCCGCCCGGTGCAGTATGAAGGCGGCGGAGCCGACACCGGCCACCGATATTATTTGCCCG
 ATGTACGCGCGCTGGATGAAGACCAGCCCTTCCCGGCTGTGCCGAAATGGTCCATCAAAAAATGG
 CTTTCGCTACCTGGAGAGACGCGCCCGCTGATCCTTTGCGAATACGCCCACGCGATGGGTAACAGT
 CTTGGCGGTTTTCGCTAAATACTGGCAGGCGTTTTCGTGATATCCCGGTTTACAGGGCGGCTTCGTC
 TGGGACTGGGTGGATCAGTCGCTGATTAAATATGATGAAAACGGCAACCCGTTGGTGGCTTACGGC
 GGTGATTTTGGCGATACGCCGAACGATCGCCAGTTCTGTATGAACGGTCTGGTCTTTGCCGACCGC
 ACGCCGCATCCAGCGCTGACGGAAGCAAAACACCAGCAGCAGTTTTTCCAGTTCCGTTTATCCGGG

Figure 37 cont. 2/3

CAAACCATCGAAGTGACCAGCGAATACCTGTTCCGTCATAGCGATAACGAGCTCCTGCACTGGATG
GTGGCGCTGGATGGTAAGCCGCTGGCAAGCGGTGAAGTGCCTCTGGATGTCGCTCCACAAGGTAAA
CAGTTGATTGAACTGCCTGAACTACCGCAGCCGGAGAGCGCCGGGCAACTCTGGCTCACAGTACGC
GTAGTGCAACCGAACCGCAGCCGATGGTCAGAAGCCGGGCACATCAGCGCCTGGCAGCAGTGGCGT
CTGGCGGAAAACTCAGTGTGACGCTCCCCGCCGCGTCCCACGCCATCCCGCATCTGACCACCAGC
GAAATGGATTTTTGCATCGAGCTGGGTAATAAGCGTTGGCAATTTAACCGCCAGTCAGGCTTTCTT
TCACAGATGTGGATTGGCGATAAAAAACAACCTGCTGACGCCGCTGCGCGATCAGTTACCCCGTGCA
CCGCTGGATAACGACATTGGCGTAAGTGAAGCGACCCGATTGACCCTAACGCCCTGGGTGCAACGC
TGGAAGGCGGGCCGATTACCGAGCCGAAGCAGCGTTGTTGCAGTGCACGGCAGATACACTTGCT
GATGCGGTGCTGATTACGACCGCTCACGCGTGGCAGCATCAGGGGAAAACTTATTTATCAGCCGG
AAAACCTACCGGATTGATGGTAAATGGCGATTACCGTTGATGTTGAAGTGGCGAGCGAT
ACACCGCATCCGGCGCGATTGGCTGAATGCCAGTGGCGCAGGTAGCAGAGCGGGTAAACTGG
CTCGGATTAGGGCCGCAAGAAAACTATCCCGACCGCCTTACTGCCGCTGTTTTGACCGCTGGGAT
CTGCCATTGTCTAGACATGTATACCCCGTACGCTCTTCCCGAGCGAAAACGGTCTGCGCTGCGGGACG
CGGAATTGAATTATGGCCACACCCAGTGGCGCGCGACTTCCAGTTCAACATCAGCCGCTACAGT
CAACAGCAACTGATGGAACACCGCATCGCCATCTGCTGCACGCGGAAGAAGGCACATGGCTGAAT
ATCGACGGTTTTCCATATGGGGATTGGTGGCGACGACTCCTGGAGCCCGTCAGTATCGGCGGAATTC
AGCTGAGCGCCGCTCGCTACCATTACCACTTGGTCTGGTGTCAAAAATAATAATAACCGGGCAGGG
GGGATCCTTCTGTGAGCGTATGGCAACGAAGGAAAAATAGTTATAGTAGCCGCACTCGATGGGAC
ATTTCAACGTAAACCGTTAATAATATTTGAATCTTATTCATTATCTGAAATGGTGGTAAACT
AACTGCTGTGTATGAAATGCTTTAAGGAGGCTTCTTTTCTAAACGATTGGGTGAGGAAACCGA
GATAGAAATAATAGGAGGTAATGATATGTATCAATCGGTGTGTAGAAAGTGTACATCGACTCATA
ATATTATATTTTTTATCTAAAAAACTAAAAATAAACATTGATTAAATTTTAATATAATACTTAAAA
ATGGATGTTGTGTCGTTAGATAAACCGTTTATGTATTTTGAGGAAATTGATAATGAGTTAGATTAC
GAACCAGAAAAGTGCAATGAGGTGCAAAAAAACTGCCGTATCAAGGACAGTTAAACTATTACTA
GGAGAATTATTTTTTCTTAGTAAGTTACAGCGACACGGTATATTAGATGGTGCCACCGTAGTGTAT
ATAGGATCTGCTCCCGGTACACATATACGTTATTTGAGAGATCATTTCTATAATTTAGGAGTGATC
ATCAAATGGATGCTAATTGACCGGCCCATCATGATCCTATTTTAAATGGATTGCGTGATGTGACT
CTAGTGACTCGGTTTCGTTGATGAGGAATATCTACGATCCATCAAAAAACAACCTGCATCCTTCTAAG
ATTATTTTAATTTCTGATGTGAGATCCAAACGAGGAGGAAATGAACCTAGTACGGCGGATTTACTA
AGTAATTACGCTCTACAAAATGTGATGATTAGTATTTTAAACCCCGTGGCGTCTAGTCTTAAATGG
AGATGCCCGTTTCCAGATCAATGGATCAAGGACTTTTATATCCACACGGTAATAAAATGTTACAA
CCTTTTGCTCCTTCATATTCAGCTGAAATGAGATTATTAAGTATTTATACCGGTGAGAACATGAGA
CTGACTCGGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAAAAAT
CGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTTCCCCCTGGA
AGCTCCCTCGTGCGCTCTCCTGTTCCGACCTGCGCCTTACCGGATACCTGTCCGCCTTTCTCCCT
TCGGGAAGCGTGCGCTTCTCAATGCTCACGCTGTAGGTATCTCAGTTCCGTGTAGGTGCTTCGC
TCCAAGCTGGGCTGTGTGCACGAACCCCGGTTACGCCACTGGCAGCAGCCACTGGTAACAGGATT
CGTCTTGAGTCCAACCCGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAACAGGATT
AGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAACTACGGCTACACT
AGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAGAAAGAGTTGGTAGC
TCTTGATCCGGCAAAACAAACCCGCTGGTAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACG
CGCAGAAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAC
GAAAACTCACGTAAAGGGATTTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTA
AATTAATAATGAAGTTTAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAA
TGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTC
CCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCG
CGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGC

AGAAGTGGTCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGAAGCTAGAGTA
AGTAGTTCGCCAGTTAATAGTTTTCGCGAACGTTGTTGCCATTGCTGCAGGCATCGTGGTGTACGCG
TCGTGTTTTGGTATGGCTTCATTTCAGCTCCGGTCCCAACGATCAAGGCGAGTTACATGATCCCC
ATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCCTCCGATCGTTGTCAGAAGTAAGTTGGCCGCA
GTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGC
TTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGC
TCTTGCCCGGCGTCAACACGGGATAATACCGCGCCACATAGCAGAACTTTAAAAGTGCTCATCATT
GGAAAACGTTCTTCGGGGCGAAAACTCTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAA
CCCACTCGTGCACCCAAGTATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAA
ACAGGAAGGC AAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTC
TTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAA
TGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTC
TAAGAAACCATTTATTCATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCTTTTCGTCTT
CGAATAAAATACCTGTGACGGAAGATCACTTCGCAGAATAAAATAAATCCTGGTGTCCCTGTTGATAC
CGGGAAGCCCTGGGCCAACTTTTGGCGAAAATGAGACGTTGATCGGCACGTAAGAGGTTCCAACCTT
TCACCATAATGAAATAAGATCACTACCGGGCGTATTTTTTGAGTTATCGAGATTTTCAGGAGCTAA
GGAAGCTAAAAATGGAGAAAAAATCACTGGATATACCACCGTTGATATATCCCAATGGCATCGTAA
AGAACATTTTGAGGCATTTTCAGTCAGTTGCTCAATGTACCTATAACCAGACCGTTTCAG

Figure 37 cont. 3/3

Figure 38 1/3

CCTCCTGAAAACTGGAATTTAATACACCATTTGTGTTTCATCATCAGACATGATATTACTGGATTT
 ATATTGTTTATGGGTAAAGGTAGAATCTCCTTAATATGGGTACGGTGTAAAGGAATCATTATTTTATT
 TATATTGATGGGTACGTGAAATCTGAATTTTCTTAATAAATATTATTTTTATTAAATGTGTATATG
 TTGTTTGGGATAGCCATGTATCTACTAATCAGATCTATTAGAGATATTATTAATTCTGGTGCAAT
 ATGACAAAAATTATACACTAATTAGCGTCTCGTTTCAGACATGGATCTGTACGAATTAATACTTG
 GAAGTCTAAGCAGCTGAAAAGCTTTCTCTCTAGCAAAGATGCATTTAAGGCGGATGTCCATGGACA
 TAGTGCTTGTATTATGCAATAGCTGATAATAACGTGCGTCTAGTATGTACGTTGTTGAACGCTGG
 AGCATTGAAAAATCTTCTAGAGAATGAATTTCCATTACATCAGGCAGCCACATTGGAAGATACCAA
 AATAGTAAAGATTTTGGCTATTTCAGTGGACTGGATGATTTCGAGGTACCCGATCCCCCTGCCCGGT
 TATTATTATTTTGGACACCAGACCACTGGTAATGGTAGCGACCGGCGCTCAGCTGAATTCGCCCG
 ATACTGACGGGCTCCAGGAGTCGTGCGCCACCAATCCCCATATGGAAACCGTCGATATTTCAGCCATG
 TGCCTTCTTCCGCGTGCAGCAGATGGCGATGGCTGGTTTCCATCAGTTGCTGTTGACTGTAGCGGC
 TGATGTTGAACTGGAAGTCGCCGCGCCACTGGTGTGGGCCATAATCAATTTCGCGCGTCCCGCAGC
 GCAGACCGTTTTTCGCTCGGGAAGACGTACGGGGTATACATGTCTGACAATGGCAGATCCCAGCGGT
 CAAAAAGGCGGCAGTAAGGCGGTGGGATAGTTTTCTTGGCGCCCTAATCCGAGCCAGTTTACCC
 GCTCTGCTACCTGCGCCAGCTGGCAGTTTCAGGCCAATCCGCGCCGGATGCGGTGTATCGCTCGCCA
 CTTCAACATCAACGGTAATCGCCATTTGACCACTACCATCAATCCGGTAGGTTTTCCGGCTGATAA
 ATAAGGTTTTCCCCTGATGCTGCCACGCGTGAGCGGTGTAATCAGCACCGCATCAGCAAGTGTAT
 CTGCCGTGCACTGCAACAACGCTGCTTCGGCCTGGTAATGGCCCCGCCCTTCCAGCGTTCGACCC
 AGGCGTTAGGGTCAATGCGGGTCGCTTCACTTACGCCAATGTCTGTTATCCAGCGGTGCACGGGTGA
 ACTGATCGCGCAGCGGCGTCAGCAGTTGTTTTTATCGCCAATCCACATCTGTGAAAGAAAGCCTG
 ACTGGCGGTTAAATTGCCAACGCTTATTACCAGCTCGATGCAAAAATCCATTTCTGCTGGTGGTCA
 GATGCGGGATGGCGTGGGACGCGGCGGAGCGTCACACTGAGGTTTTCCGCCAGACGCCACTGCT
 GCCAGGCGCTGATGTGCCCCGCTTCTGACCATGCGGTGCGTTTCGGTTGCACTACGCGTACTGTGA
 GCCAGAGTTGCCCGGCGCTCTCCGGCTGCGGTAGTTTCAGGCAGTTCAATCAACTGTTTACCTTGTG
 GAGCGACATCCAGAGGCACTTTACCCTTGGCAGCGGCTTACCATCCAGCGCCACCATTCCAGTGCA
 GGAGCTCGTTATCGCTATGACGGAACAGGTATTTCGCTGGTCACTTCGATGGTTTGGCCGGATAAAC
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 CCTGTAAACGGGGATACTGACGAAACGCTGCCAGTATTTAGCGAAACGCCAAGACTGTTACCCA
 TCGCGTGGGCGTATTCGCAAAGGATCAGCGGGCGCGTCTCTCCAGGTAGCGAAAGCCATTTTTTGA
 TGGACCATTTTCGGCACAGCCGGGAAGGGCTGGTCTTCATCCACGCGCGGTACATCGGGCAAATAA
 TATCGGTGGCCGTGGTGTGCGCTCCGCCGCTTCATACTGCACCGGGCGGGAAGGATCGACAGATT
 TGATCCAGCGATACAGCGCTCGTGATTAGCGCCGTGGCTGATTCAATCCCCAGCGACCATGATGA
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 AGCGCGGATCATCGGTCAGACGATTCAATGGCACCATGCCGTGGGTTTTCAATATTGGCTTCATCCA
 CCACATACAGGCCGTAGCGGTGCGACAGCGGTACCACAGCGGATGGTTTCGGATAATGCGAACAGC
 GCACGGCGTTAAAGTTGTTCTGCTTCATCAGCAGGATATCCTGCACCATCGTCTGCTCATCCATGA
 CCTGACCATGCAGAGGATGATGCTCGTGACGGTTAACGCCTCGAATCAGCAACGGCTTGCCGTTCA
 GCAGCAGCAGACCATTTTCAATCCGCACCTCGCGGAAACCGACATCGCAGGCTTCTGCTTCAATCA
 GCGTGCCGTGCGCGGTGTGCAGTTCAACCACCGCACGATAGAGATTTCGGGATTTTCGGCGCTCCACA
 GTTTTCGGGTTTTTCGACGTTGAGACGTAGTGTGACGCGATCGGCATAACCACCAGCTCATCGATAA
 TTTACCCGCCGAAAGGCGCGGTGCCGCTGGCGACCTGCGTTTCACCTGCCATAAAGAACTGTTA

Figure 38 cont 2/3

GCAGCACCATCACCGCGAGGCGGTTTTCTCCGGCGCGTAAAAATGCGCTCAGGTCAAATTGAGACG
GCAAAACGACTGTCTGGCCGTAACCGACCCAGCGCCCGTTGCACCACAGATGAAACGCCGAGTTAA
CGCCATCAAAAATAATTTCGCGTCTGGCCTTCCTGTAGCCAGCTTTCATCAACATTAAATGTGAGCG
AGTAACAACCCGTCGGATTCTCCGTGGGAACAAACGGCGGATTGACCGTAATGGGATAGGTTACGT
TGGTGTAGATGGGCGCATCGTAACCGTGCATCTGCCAGTTTGAGGGGACGACGACAGTATCGGCCT
CAGGAAGATCGCACTCCAGCCAGCTTTCGGGCACCGCTTCTGGTGCCGGAACAGGCAAAGCGCC
ATTCGCCATTGAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTACGCC
AGCTGGCGAAAGGGGGATGTGCTGCAAGGCGATTAAAGTTGGGTAAACGCCAGGGTTTTCCAGTCAC
GACGTTGTAAAACGACGGGATCTCCCATGCTCGAGTTATGATCTACTTCCTTACCGTGCAATAAAT
TAGAATATATTTTTCTACTTTTACGAGAAATTAATTATTGTATTTATTATTTATGGGTGAAAACTT
ACTATAAAAAGCGGGTGGGTTTGGAAATTAGTGAAAGCTGGGAGATCTGGCGCGCCTGCAGAGAATT
CGTTTAAACGGATCCCGAGCTTATTTATATTCCAAAAAATAAAATTTCAATTTTTTAAGCT
GGGGATCCTCTAGAGTCGACCTGCAGGCATGCTCGAGCGGCCGCCAGTGTGATGGATATCTGCAGA
ATTCGGCTTGGGGGGCTGCAGGTGGATGCGATCATGACGTCCTCTGCAATGGATAACAATGAACCT
AAAGTACTAGAAATGGTATATGATGCTACAATTTTACCCGAAGGTAGTAGCATGGATTGTATAAAC
AGACACATCAATATGTGTATACAACGCACCTATAGTTCTAGTATAATTGCCATATTGGATAGATTC
CTAATGATGAACAAGGATGAACTAAATAATACACAGTGTATATAATTAAAGAATTTATGACATAC
GAACAAATGGCGATTGACCATTATGGAGAATATGTAAACGCTATTCTATATCAAATTCGTAAAAGA
CCTAATCAACATCACACCATTAATCTGTTTAAAAAATAAAAAAGAACCCGGTATGACACTTTTAAA
GTGGATCCCGTAGAATTCGTAAAAAAGTTATCGGATTTGTATCTATCTTGAACAAATATAAACCG
GTTTATAGTTACGTCCTGTACGAGAACGTCCTGTACGATGAGTTCAAATGTTTCATTGACTACGTG
GAACTAAGTATTTCTAAAATTAATGATGCATTAATTTTGTATTGATTCTCAATCCTAAAACTA
AAATATGAATAAGTATTAAACATAGCGGTGTACTAATTGATTAAACATAAAAAATAGTTGTTAACT
AATCATGAGACTCTACTTATTAGATATATTCTTTGGAGAAATGACAACGATCAAACCGGGCATGC
AAGCTTGTCTCCCTATAGTGAGTCGTATTAGAGCTTGGCGTAATCATGGTCATAGCTGTTTCCTGT
GTGAAATTGTTATCCGCTCACAATTCACACAACATACGAGCCGGAAGCATAAAGTGTAAGCCTG
GGGTGCCTAATGAGTGAGCTAACTCACATTAATTGCGTTGCGCTCACTGCCCGCTTTCGAGTCGGG
AAACCTGTGCGGCCAGCTGCATTAATGAATCGGCCAACCGCGGGGAGAGGCGGTTTGCCTATTGG
GCGCTCTTCCGCTTCTCGCTCACTGACTCGCTGCGCTCGGTGCTTCGGCTGCGGCGAGCGGTATC
AGCTCACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTG
AGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCGATAGGCT
CCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACT
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TACCGGATACCTGTCCGCCTTTCTCCCTTCGGGAAGCGTGGCGCTTCTCATAGCTCAGCTGTAG
GTATCTCAGTTCCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTACGCC
CGACCGCTGCGCCTTATCCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC
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GAAGTGGTGGGCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCC
AGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGGTAGCGGTGG
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TTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTTTGGTCATGAGATTATC
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TGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCT
ATTTCTGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACC
ATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTCACCGGCTCCAGATTTATCAGCAAT
AAACCAGCCAGCCGGAAGGGCCGAGCGCAGAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTC
TATTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGG

Figure 38 cont. 3/3

ACGATCAAGGCGAGTTACATGATCCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCCTCC
GATCGTTGTCAGAAGTAAGTTGGCCGCAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTC
TCTTACTGTCATGCCATCCGTAAGATGCTTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTG
AGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACA
TAGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCTCAAGGATCTT
ACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGACCCCAACTGATCTTCAGCATCTTTTAC
TTTCACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGGGAATAAGGGC
GACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTA
TTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCAC
ATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTATTATCATGACATTAACCTATAAAAA
TAGGCGTATCACGAGGCCCTTTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACCTCTGACACAT
GCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGG
CGCGTCAGCGGGTGTTGGCGGGTGTCGGGGCTGGCTTAAGTATGCGGCATCAGAGCAGATTGTACT
GAGAGTGACCATATGCGGTGTGAAATACCGCACAGATGCGTAAGGAGAAAATACCGCATCAGGCG
CCATTCGCCATTACAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCTATTACG
CCAGCTGGCGAAAGGGGGATGTGCTGCAAGGCGATTAAGTTGGGTAAACGCCAGGGTTTTCCAGTC
ACGACGTTGTAAAACGACGGCCAGTGAATTGGATTTAGGTGACACTATAGAATACGAATTC